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Educational News and Editorial Comment

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Education and Salaries of City School Teachers

A recent number of the Research Bulletin of the National Education Association is published under the title *City Teachers: Their Preparation, Salaries, and Experience.* Replies on a questionnaire received from superintendents of schools in cities with populations above twenty-five hundred furnished the basic data. The bulletin has the following to say with regard to the sampling:

> Some school systems do not keep personnel records in enough detail to have up-to-date figures on levels of preparation of teachers in service. But a large number—1,456 systems—sent in the facts requested. Replies came from more than 60 per cent of the cities above 30,000 in population, and from 46 per cent of all school systems in cities over 2,500 in population. It is possible that in the non-reporting cities, where adequate personnel records are lacking, the qualifications of teachers are lower than is typical of the cities represented in the bulletin.

The bulletin presents a mass of pertinent and, in some respects, surprising information on the status of teachers in urban America. In 1938–39, for example, the median city teacher had completed 4.2 years of educational preparation beyond high school. The corresponding level of preparation in 1920 was only 2.5 years. The median level of preparation is the same for small cities below five thou-

sand in population as for the larger cities of one hundred thousand or more in population. In cities of all sizes and in all parts of the country, teachers in kindergartens and elementary schools have had less formal education than have the teachers in junior and senior high schools. Perhaps the most striking fact revealed with respect to the preparation of teachers is the excellent showing of teachers in southern cities. The two regions in which teachers have had the most formal education are the Southwest and the Southeast. Even

TABLE 1*

MEDIAN NUMBER OF YEARS OF PREPARATION BEYOND HIGH-SCHOOL GRADUATION FOR TEACHERS IN SERVICE IN CITY SCHOOL SYSTEMS IN 1938–39, BY SIZE OF CITY

Population Group	Kindergarten	Elementary School	Junior High School	Senior High School	Total
I. Over 100,000 (57 cities)...	2.9	3.4	4.5	4.9	4.2
II. 30,000–100,000 (155 cities)	3.1	3.3	4.5	4.7	4.2
III. 10,000–30,000 (347 cities)..	3.3	3.3	4.5	4.7	4.2
IV. 5,000–10,000 (399 cities)...	3.5	3.5	4.4	4.7	4.3
V. 2,500–5,000 (498 cities)...	3.6	3.4	4.4	4.7	4.2
Total (1,456 cities).....	3.1	3.4	4.5	4.8	4.2

* Adapted from Table 2 in *City Teachers: Their Preparation, Salaries, and Experience*, p. 7. Research Bulletin of the National Education Association, Vol. XVIII, No. 1. Washington: Research Division of the National Education Association, 1940.

Negro teachers in southern cities have had more preparation beyond high school than have the teachers of New England or the Middle Atlantic states. If length of service is a reliable index, teaching for most city teachers is tending to become a life-career; the median city teacher has had fourteen years of experience. Levels of experience are much higher in the larger than in the smaller cities. The data indicate, too, that teachers' salaries are much more likely to be determined by the size of the city or the geographical region in which teachers work than by the preparation and experience which teachers have had.

Table 1 presents data on the levels of preparation by size of city. The following statement is explanatory of this and other tables which space will not permit us to present.

The median level of preparation in 1938–39 for the 201,206 teachers covered by Table [1] was 4.2 years of training beyond high school. The typical classroom teacher in this group of city school systems is one whose education represents college graduation plus one or two additional college courses. The median level of preparation of teachers is identical in four of the five population groups of cities—4.2 years. In Group IV, cities 5,000 to 10,000 in population, the median is higher by one-tenth of one year.

This uniformity of teacher preparation among cities of different sizes may be surprising. The belief has been general that teachers in small towns and cities were less well educated than teachers in larger places. But Table [1] shows this belief to be erroneous, so far as this group of 1,456 cities is concerned. The median years of training of kindergarten teachers is lowest in the largest cities and highest in the smallest cities, the median in Group V being seven-tenths of a year higher than in the large cities in Group I. Median training levels are almost the same for all population groups in each of the other school divisions, with two-tenths of a year as the widest variation shown. . . . .

In general, it appears that there are as many college graduates in the small cities as in the large ones. The large cities do have the advantage, however, of a greater proportion of teachers with five years of training or more.

The differences between elementary schools and secondary schools in levels of teacher preparation date back at least a hundred years. The early normal schools were organized to train teachers for elementary grades while the liberal-arts colleges were the source of teachers for the selected student bodies of the academies and the early public high schools. The distinction in sources of supply between elementary and secondary teachers has continued into the twentieth century, although teachers' colleges now are preparing high-school teachers in larger numbers than formerly. Salary differences between elementary- and high-school teachers . . . . are another symptom of this old distinction between the upper and lower age groups of pupils.

The chances of being taught by a college graduate are about the same for the pupil in a small town as for the pupil in a big city. But, regardless of city size, the child in the lower grades is very much less likely than his brother in high school to receive class instruction from a teacher with four years of preparation. . . . . In the elementary schools about one teacher in three can claim college graduation or its equivalent, but in senior high school the proportion is nine out of ten. The median elementary teacher has completed 3.4 years of college work; the median high-school teacher, 4.8 years.

As we remarked at the outset, one of the striking facts brought out in this investigation is the rather wide differential in the preparation of teachers by regions.

It has been shown that the average teacher in a small city is likely to be at about the same level of preparation as the average teacher in a large city. There

is another basis for grouping cities, however, by which rather substantial differences in levels of preparation appear, especially in elementary schools. [See Table (2).]

In preparing Table [2] the cities were grouped in seven regions.

The highest levels of preparation of kindergarten and elementary teachers are found in the Southwest, where 4.4 years of preparation is the median for teachers in elementary schools. High levels of training are also reported for teachers of elementary schools in the Southeast, where the median is 4.1 years. So much has been said of the financial handicaps suffered by southern schools that it may be surprising to learn that so far as formal educational attainments are concerned, the median city teacher in the Southeast is slightly above the average for the country as a whole.

TABLE 2*

MEDIAN NUMBER OF YEARS OF PREPARATION BEYOND HIGH-SCHOOL GRADUATION OF CITY TEACHERS, 1938–39, BY REGION†

Region	Number of Teachers	Kindergarten	Elementary School	Junior High School	Senior High School	Total
New England (167 cities)	21,650	2.7	2.8	4.1	4.6	3.4
Middle Atlantic (350 cities)	49,031	2.8	2.8	4.4	4.7	3.9
Southeast (172 cities)	19,369	3.5	4.1	4.5	4.7	4.3
Middle states (454 cities)	70,660	3.0	3.5	4.5	4.8	4.3
Northwest (117 cities)	11,377	4.1	3.6	4.5	4.7	4.3
Southwest (94 cities)	12,778	4.3	4.4	4.6	4.8	4.5
Far West (102 cities)	16,341	3.7	3.8	5.0	5+	4.6
Total (1,456 cities)	201,206	3.1	3.4	4.5	4.8	4.2

* Adapted from Table 5 in *City Teachers: Their Preparation, Salaries, and Experience*, p. 10. Research Bulletin of the National Education Association, Vol. XVIII, No. 1. Washington: Research Division of the National Education Association, 1940.

† Does not include Negro teachers in segregated schools.

California's long-standing requirement of five years of preparation for certification to high-school teaching helps to account for the very high levels of training of secondary teachers in the Far West. Half of the junior high school teachers and 67.7 per cent of the senior high school teachers have completed five years of training or more.

In all regions the high-school teachers are above the elementary teachers in levels of preparation. The differences are greatest in the Middle Atlantic states and least in the Southwest.

Table 3 presents data on the preparation of Negro teachers in southern cities. It will be noted that Negro teachers in cities having segregated schools for Negro pupils have, on the average, received

4.1 years of preparation beyond high school. In contrast, teachers in New England cities have received only 3.4 years of preparation beyond high school, and teachers in cities in the Middle Atlantic states have received only 3.9 years of preparation beyond high school. Approximately 54 per cent of the Negro teachers have completed four years or more of preparation beyond high school, and only 8.7 per cent are below the two-year level in training.

In view of all that has been said about the inadequate educational facilities in the South, these figures on the preparation of both white

TABLE 3*

MEDIAN NUMBER OF YEARS OF PREPARATION BEYOND HIGH-SCHOOL GRADUATION OF TEACHERS IN SERVICE IN SEGREGATED SCHOOLS FOR NEGRO PUPILS IN CITY SCHOOL SYSTEMS, 1938–39, BY SIZE OF CITY

Population Group	Elementary School	Junior High School	Senior High School	Total
I. Over 100,000 (13 cities)	3.2	4.5	4.5	4.1
II. 30,000–100,000 (29 cities)	3.7	4.2	4.5	4.1
III. 10,000–30,000 (49 cities)	3.4	3.7	4.5	4.1
IV. 5,000–10,000 (54 cities)	4.0	4.3	4.5	4.2
V. 2,500–5,000 (74 cities)	2.8	4.1	4.4	3.5
Total (219 cities)	3.4	4.3	4.5	4.1

* Adapted from Table 6 in *City Teachers: Their Preparation, Salaries, and Experience*, p. 11. Research Bulletin of the National Education Association, Vol. XVIII, No. 1. Washington: Research Division of the National Education Association, 1940.

and Negro teachers in this region may seem surprising. Yet they confirm a fact which we have repeatedly pointed out in the editorial pages of the *Elementary School Journal*, namely, that inequality of educational opportunity in this country is primarily a rural problem. The birth-rate for both whites and Negroes is relatively low in southern cities; the number of children per thousand adults in the productive age class is no greater than in northern cities. In fact, it is slightly lower. The plane of living in southern cities is very much higher than in the rural areas of the south, and it is considerably higher than in the rural areas in other parts of the nation. For example, in 1930 the income per child of school age in the non-farm population of the Southeast was $2,055 as compared with $890 in the farm population of the Middle states. Income per child in the non-

farm population of North Carolina was $1,633; in the farm population of Iowa it was $737. It is also true—and this is the more important explanation—that in the South there is relatively less employment opportunity in industry than there is in the Northeast or the Middle West. Approximately two hundred great industrial counties, most of them located in the Northeast and the Middle West, provide about three-fourths of all the jobs in industrial and mechanical pursuits. Many young men and women in the South who are able to obtain a college education are drawn into teaching at a wage lower than that paid in northern cities in part because of the lack of employment opportunity in industry or business.

Since teachers in southern cities spend, on the average, more time in college than teachers in other parts of the country, it appears that one of the best ways to improve the quality of education provided boys and girls in these cities is to improve the quality of college education.

The following statement has to do with the trends in teachers' salaries and with the relation of preparation to compensation.

> The past twenty years have seen a striking rise in the level of training and experience of city teachers; they have witnessed also an upward trend in teachers' salaries. Whether or not the increase in salaries has been commensurate with the improvements in training and experience cannot be stated, because no common unit of measurement can be applied to the changes that have occurred. Increased salaries and increased training probably have had a reciprocal influence on each other, higher salaries tending to encourage teachers to acquire better preparation, and better preparation tending to justify the payment of higher salaries.
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> . . . . Salaries in 1920 were extremely low. They had risen but slowly during the World War period and were actually below pre-war levels in purchasing power. By 1925 the losses of the war years had been overcome. Between 1925 and 1931 the average salary of all teachers moved upward faster than the estimated average salary of city teachers. The city teachers, however, received lighter salary cuts during the depression than country teachers, and apparently there has been more progress in cities than in the country toward restoration of those cuts. By 1939 the estimated average salary of all city teachers combined was near the predepression figures, but in many centers, especially the smaller cities, severe reductions still were in effect. The changes in the purchasing power of the dollar show that, in spite of downward trends in the depression years, city teachers' average salaries are higher in real value than they were fifteen or twenty years ago. But they are still far below a professional salary standard.

In four of the five population groups the median salary of elementary teachers is shown to be lowest for cities where training is high and highest where training is low; in other words, there is an exact reversal of the relationship which might be expected. A similar negative relationship is found for junior high school teachers' salaries. But when senior high school salaries are compared thus, using five years of preparation as the basis of classification, a consistent tendency appears for salaries to be higher where training is higher, average where training is average, and lower where training is lower.

A Program of Action for the Welfare of American Children

All who are interested in the general welfare in the United States will want to read carefully the report of the recent White House Conference on Children in a Democracy. This conference, the fourth in a series of children's conferences held during the past thirty years, "addresses itself to the interests of all the children in the nation and to every aspect of child welfare, including home life, material security, education, health, and general preparation for the responsibilities of citizenship." The problems of child welfare are discussed under the following major topics: "Family Life and the Child," "Religion in the Lives of Children," "Educational Services," "Protection against Child Labor," "Youth and Their Needs," "Conserving the Health of Children," "Children under Special Disadvantages," and "Public Financing and Administration." The analysis of each topic is concluded with definite recommendations for positive social action. The conference, for example, submits the following proposal with respect to conserving the health of children.

1. The health and well-being of children depends to a large extent upon the health of all the members of their families. Preventive and curative health service and medical care should be made available to the entire population, rural and urban, in all parts of the country. A considerable portion of the population is able to obtain from its own resources all or part of the necessary medical service. Another large section of the population, however, consists of families whose incomes are below the level at which they can reasonably be expected to budget all the varying costs of illness without interfering with the provision of other items essential to the family's health and welfare; for these there should be available adequately supervised medical care through a program financed by general tax funds, social insurance systems, or such combination of methods as may best be suited to local conditions.

To achieve these ends will require expansion of full-time local public-health

services organized on a city, county, or district basis; construction and adequate support of health centers and hospitals as needed, especially in rural areas, and more effective use of existing medical services and facilities; more effective coordination of community public-health and medical services, conducted by various agencies, public and private.

2. For all women during maternity and for all newborn infants, complete service for maternity care and care of the newborn should be available, through private resources or public funds. Such service includes—

Care of the mother throughout pregnancy, including the service of a qualified physician; of a public-health nurse, preferably one with training in obstetric care and care of newborn infants; of a dentist, and nutrition service when needed.

Care at delivery by a qualified physician, aided by a nurse trained and experienced in delivery nursing care.

Obstetric and pediatric consultation service when needed to aid general practitioners in their care of mothers and infants.

Hospital care, as necessary, in an approved hospital provided with obstetric and pediatric consulting staff, isolation facilities for infected patients, facilities for caring for emergency or complicated cases, transportation, and social service.

After the birth of the child medical and nursing care for the mother in home, hospital, or clinic; supervision of nutrition of the nursing mother; and medical and nursing supervision of the newborn infant.

3. For all infants and children preventive and curative medical services should be available, including adequate means for control of communicable disease. These services, financed through private resources or public funds, include—

Health supervision and care for infant and child at stated intervals throughout the period of growth and development at home, in child-health conferences, in schools, and in physician's offices, including preventive dentistry for children of preschool and school age by qualified dentists.

Health instruction in schools and health education of parents in methods of conserving both physical and mental health.

More intensive and widespread programs of safety and education.

Effective nutrition services.

Mental-health service when needed.

Medical care for sick children in home, clinic, or office of qualified physicians. Facilities should be available for expert diagnosis and care of sick children and for consultation by pediatricians in appropriately organized diagnostic and treatment clinics and for social services as needed.

Hospital care, as necessary, in an approved hospital provided with pediatric consulting staff and separate wards for children; care in convalescent homes, as necessary for medical, social, or economic reasons, for children in need of prolonged care to restore health and fit them for family life and community life.

4. In the sharing of responsibility for public maternal and child-health services by local communities, states, and the federal government, the following principles should be observed:

The local community should provide maternity care and health and medical services for children, as needed, as part of its public-health responsibility, utilizing available qualified services and facilities.

The state should give leadership, financial assistance, specialized service, and supervision in the development of local services, and should be responsible for setting standards of care and service acceptable on a state-wide basis.

The federal government should assist states through financial support, research, and consultation service, and should be responsible for setting standards of care and service acceptable on a nation-wide basis.

Federal grants to the states for the expansion of maternal and child-health services, including hospital and medical care, should be made on a basis that will reduce most effectively existing inequalities in these fields of service.

5. In connection with maternal and child-health programs provision should be made for training needed personnel in undergraduate professional schools and graduate curriculums.

6. In recognition of the fundamental importance of nutrition to the health of children, it is recommended that the President appoint a national nutrition committee composed of scientists, economists, agricultural experts, consumers' representatives, teachers, and administrators. Such a committee should co-ordinate the various efforts now being made to improve nutrition.

7. Adequate support should be given to research as well as to direct service through public appropriation and private grants, since research underlies all advance in practical programs of health and medical care for mothers and children.

Here and There among the Schools

The items selected for reporting in this issue of the *Elementary School Journal* relate to a plan for interschool co-operation on a county-wide basis, a social-living unit at the junior high school level, interclass and interschool visitation as a means of in-service training, the use of the community survey in the improvement of instruction, and a program for introducing music into rural schools.

Co-operation among the elementary schools of an entire New York county

Teachers in the elementary schools of Westchester County, New York, have worked out and put into operation an unusual and extremely interesting plan for securing interschool co-operation among the schools of the county. We are indebted to Grace T. Lewis, chairman of the Cur-

riculum Study Committee of the Westchester County Teachers Association, for the following account of the plan, which was written by Edward W. Flickinger, of the Washington Irving School, Tarrytown, New York. We publish Mr. Flickinger's account in the belief that teachers in many parts of the country will be interested in the kind of work that his group is doing.

For six years the elementary schools of Westchester County, New York, have worked together in a conscientious endeavor to help one another. A general committee co-ordinates the various parts of the program, which is arranged from the suggestions received from all schools. The general committee is made up of the chairman; three subchairmen in charge of primary, intermediate, and advanced grades; and a subchairman in charge of visitations. Each elementary school in the county is encouraged to have at least one member of its faculty become an active member of the general committee. The following projects are among those found worth while during the past year.

Graded book list.—In accordance with numerous requests from teachers and principals, the committee reviews every autumn the new library books for the elementary schools, selects the ten best for each grade, and sends the complete mimeographed lists to the principals of all elementary schools in the county by the first of December. The necessity for such a list is readily understood when one considers the number of books published during the year. In addition to being a distinct and helpful guide to teachers, the list has proved of immeasurable value in guiding parents in the purchases of new books for their children. Such a list, prepared by experts who have no books to sell, saves time for the conscientious person who wants the best and makes available the judgment of outstanding teachers in this locality.

School-visitation program.—The Committee on Visitations plans at least four general visits distributed through the year to different schools in the county. The school visited is one where the procedure for which the visit is arranged may be seen at its best. Often a specialist is invited to talk or demonstrate in the special field for which the visit is made. Visiting programs for the last few years have emphasized (1) elementary science, with field trips; (2) industrial plants of Westchester; (3) remedial programs, with emphasis on reading; and (4) the newest elementary schools in Westchester and their equipment.

Publications.—One of the desirable outcomes of the effort to compile the worth-while successes in certain schools was the publication of the following pamphlets written by members of, and distributed by, the committee: "The Geology of Westchester County," "The History of Westchester County," "Present-Day Westchester," "Mushrooms of Westchester," "History of Port Chester," and "Industries of Westchester." These pamphlets have proved of great value in acquainting both teachers and pupils with their county. A new pamphlet on "The Government of Westchester" is now in preparation.

Exhibits.—On several occasions exhibits have been collected on a county-wide basis and shown at a central point to broaden the scope and originality of teachers in service. Because these exhibits have not reached as great a number of teachers as desired, a plan is at present under consideration whereby helpful materials will be exchanged between schools.

I cannot help believing that the work of the committee has been most worth while in publicizing any unusual material and important information often possessed by a few but rarely made the common property of all without cost.

The children in the elementary schools of Westchester County must certainly profit from the social and civic attitudes resulting directly from the fourfold program developed.

A social-living unit in an Idaho junior high school

We have received a communication from Homer M. Davis, superintendent of schools in Twin Falls, Idaho, from which we quote the following account of his experience with a social-living unit in the junior high school.

In December, 1937, all the children of our sixth grade were given the Metropolitan Achievement Test. We found that on the complete test they rated just about average for the entire nation but below average in geography and history. The following autumn all the seventh-grade pupils were placed in a social-living unit, which consisted of history, geography, English (both oral and written), penmanship, and spelling. Teachers spend two hours at a time each day in this class. We use many kinds of textbooks, and all the work is correlated. At the end of one year we found that on the whole test our pupils were above the national average by three months, and in geography and history they were above the national average by eight months. We are continuing with social-living units in the eighth grade this year, and we expect to test our pupils again with a different form of the Metropolitan Achievement Test. We realize that this type of factual test does not measure unit teaching as well as does a test of character and attitude, but we feel that, if the pupils measure up in a factual way, they would make even a better showing on an attitude test.

Interclass visitation for in-service training of the teachers in a city system

In the recently published *Annual Report of the Assistant Superintendent of Schools* of New York City, attention is called to the practice of interclass and interschool visitation. A sampling of approximately a third of the school districts reveals that about two-thirds of these schools have in force some plan of interclass visitation and that 79 per cent make it possible for at least some teachers to improve their professional training

through observation of work done in other schools. One school in Queens reports the following plan for interclass visitation.

A schedule of visits was arranged last term through which all teachers were afforded an opportunity to visit others. The purpose was to determine the high points of the school. Secondary purposes were to break the ice in the matter of class visitation, to take the edge off the suggestion that weak teachers visit the stronger ones, to make the teachers accustomed to having someone besides children in the room, and to show teachers their own weak points or to reassure them as to the value of their own work.

The principal of this school made the following comment on the plan.

Teachers were afraid of the plan at first but responded beautifully. They learned to know one another better and to appreciate one another's difficulties. The fear of supervision was allayed. The number of high points were noted by the teachers themselves. On the whole the plan proved valuable.

Both principals and assistant superintendents express the opinion that these interclass and interschool visitations are of distinct value. The hope is also expressed that it will prove feasible to extend the practice in the future.

Community survey used in improving instruction From J. E. Bryan, superintendent of schools of Jefferson County, Alabama (with offices in Birmingham), we have received a bulletin giving an account of a comprehensive program for the improvement of instruction in the school system of the county. We quote the following paragraphs which describe the use that is being made of community surveys.

During the past two years a systematic survey of the communities of Jefferson County has been in progress. The work, so far as assembling data is concerned, has, in the main, been completed. This survey took into consideration every important phase of community life that could be brought to bear on our school problems, instructional and otherwise, such as health, housing, recreation, religion, education, and employment.

It is our conception that the curriculum is the entire program of the school's work. Therefore, we must know and understand the social and economic conditions existing among the people we are trying to serve. It is generally agreed that the school curriculum should be constructed out of the culture of the people. Unless there is at least a fairly accurate interpretation of the economic system and the social institutions of our people, any attempt at curriculum revi-

sion may prove detrimental instead of helpful. We hope to keep our program on a sound basis.

This survey is very comprehensive. Most of the schools have done good to excellent work in compiling reports and are enthusiastic over the possible outcomes. The possibilities are great, depending, in a large measure, upon the enthusiasm and interest of the individual principal and his staff. Summaries submitted by principals indicate a rather thorough grasp of the importance of this work. Curriculum implications listed by them are most significant.

It has been stressed all along that we did not plan to gather data to be tucked away. This would be a waste of time. Data must be used in each school according to individual needs. Neither do we feel that, with such a diversity of interests and conditions, a general statement or formula for county-wide purposes can be given.

The picture of community life varies considerably in adjoining communities. The problem in connection with the picture developed through the community survey is simply this: "What should be done?" Much practical use has already been made of the data. Each principal should sit down and study the results with his staff and plan to improve conditions. This can be done by developing units of work that deal specifically with health, housing, recreation, religion, and education. The information should be made available to the P.T.A., community and civic organizations. The church organization should also be let in on this program. Each school should list deficiencies in the community, decide on objectives, and proceed judiciously with the program.

Constant reference to survey data should be made in health and social studies. Teachers of home economics have a wealth of material now at their disposal if they really wish to vitalize the subject and make their programs function in community life. There is hardly a subject in the curriculum that cannot be vitalized to a higher degree by the proper use of the data collected in the community survey. Much planning has been done along this line for the future.

Every teacher, principal, and administrator connected with the Jefferson County schools has a better picture of life in our county today and has felt the challenge for a more effective program than the traditional type which was at one time considered good enough. This challenge is being met courageously and sensibly by the school people and patrons as well, in proportion, as this data is interpreted and made available.

Making training in music available in rural schools L. R. Potts, county superintendent (with offices at Moundsville) has sent us a description of a program being worked out in Marshall County, West Virginia, whereby it is hoped that the teaching of music may be made effective in all the rural schools of the county. A survey was made of the facilities for teaching music,

including an inventory of musical instruments, books, and the music education of teachers. Thereafter a demand arose for a course in music for teachers, and an extension course was given by the University of Pittsburgh. Forty-two teachers completed the course. Through special arrangements Oglebay Institute, Oglebay Park, Wheeling, West Virginia, and the parent-teachers' associations of the county put thirty-seven phonographs, fifty-two sets of song records, twenty sets of appreciation records, and fifteen combination radio-phonographs in the schools of Marshall County. All the rural schools provided themselves with state-adopted songbooks and made music a required subject. In the spring a county-wide music festival will be held at Moundsville, the county seat.

Population Trends and the Growth of the Junior College

For a number of years enrolments in the junior colleges of this country have been increasing rapidly. It seems reasonable to suppose that the changing age structure of the population resulting from a declining birth-rate is one of the factors influencing this increased enrolment. As children and youth become a declining element in the population and as persons in the economically productive age group of twenty to sixty-four become an increasing element, the burden of child care and education, so far as numbers are concerned, grows lighter. Roughly, the social burden of child support and education in 1930 was only about three-fifths as great as it was in 1830, and in 1970 it may be expected to be about two-thirds as great as it was in 1930.

This decline in youth as a population element necessarily reflects itself in school attendance. According to the best estimates there are now about one and one-half million fewer children of elementary-school age than there were ten years ago. This decline in the number of children will necessarily translate itself into a shrinkage of enrolment in the elementary school. In fact, it has already done so. During the six-year period 1930–36 enrolment in the elementary-school grades decreased in thirty-six states; the total decrease in enrolment

amounted to nearly nine hundred thousand. Future trends with respect to high-school enrolment are more uncertain. It is clear, however, that the period of phenomenal expansion is drawing to a close. After 1940 the number of young persons of high-school age may be expected to grow smaller; by 1980 it appears that the number of young persons of high-school age will be about a million and a third smaller than in 1940. With the population of high-school age actually decreasing and with 65 per cent of those in this age group already attending school, it will be impossible, as in the past, to double high-school enrolments with each succeeding decade.

The decline in the rate of growth in high-school enrolments should prove advantageous so far as extending to youth an expanded and enriched educational program is concerned. In an era of unprecedented popularization of education, emphasis has necessarily been placed on quantitative considerations; for the past half-century the task of doubling the facilities for secondary education every decade or so has taxed heavily the resources of most communities. As the burden at the elementary-school level grows lighter and as the rate of increase in high-school enrolment falls off, it should be possible to improve standards and to extend the opportunity of a junior-college education to a larger percentage of youth. Trends in population growth should facilitate the extension of the secondary school upward to include the junior college.

At any rate, as we pointed out previously, junior-college enrolments are at present expanding rapidly. The following paragraphs quoted from the *New York Sun* give some idea of the development of junior colleges during the past decade.

> The junior college, barely more than a name a decade ago, now enrols close to 200,000 students, according to the American Association of Junior Colleges, which today issued its 1940 Junior College Directory.
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> Enrolment in junior colleges doubled within the last seven years, according to the association. It reached 196,510 at the end of 1939, the increase within the last year being 41,000, or 26.4 per cent. This was the largest annual growth, both numerically and on a percentage basis, since the junior-college movement got under way.
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> According to Walter C. Eells, secretary of the association, there are now 575 junior colleges, as compared with 556 reported a year ago. California leads the

nation, with 64 junior colleges enrolling 73,669 students. The statistics for other leading states are:

	Number	*Enrolment*
Texas	40	12,804
Iowa	36	3,409
Oklahoma	29	5,394
Missouri	24	7,831
Kansas	24	5,398
Illinois	23	14,711
Pennsylvania	23	3,246
Mississippi	21	4,645
North Carolina	21	4,592
Georgia	20	5,925

Who's Who for April

The authors of articles in the current issue Arthur I. Gates, professor of education at Teachers College, Columbia University. John W. Dickey, instructor in education and mathematics at New Jersey State Teachers College, Newark, New Jersey. Blanche Loudon, principal and supervisor of the Intermediate Department of the State Teachers College, Moorhead, Minnesota. Grace Arthur, psychologist at the Amherst H. Wilder Child Guidance Clinic, St. Paul, Minnesota. A. E. Layman, principal of Menands School, Menands, Albany, New York. L. C. Gilbert, associate professor of education at the University of California. Katherine L. McLaughlin, professor of education at the University of California at Los Angeles.

The writers of reviews in the current issue J. Cayce Morrison, assistant commissioner for research, New York State Education Department, Albany, New York. F. J. Adams, associate professor of educational psychology at the University of Texas. John S. Brubacher, associate professor of the history and philosophy of education at Yale University. R. V. Young, associate professor of education at the University of Pittsburgh. Helen L. Koch, associate professor of child psychology in the Department of Home Economics at the University of Chicago. C. T. Gray, professor of educational psychology at the University of Texas.

A FURTHER EVALUATION OF READING-READINESS TESTS

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A SERIES of studies on reading readiness was begun by the writer in 1933. Data gathered during 1933–34 on the role of mental age were published in 1937.[1] The results of a second study,[2] designed to appraise the predictive values of approximately a hundred tests, examinations, and ratings and carried on during 1934–36, and of a third study,[3] conducted during 1937–38 and arranged to yield further evaluations of the tests which appeared in the second investigation to be most promising, were published in 1939. The present study, based on data gathered during the academic year 1938–39, is a report of a further investigation of the tests previously shown to be most useful as members of a battery for predicting reading progress during the first year of school.

THE TESTS

The tests used were the Pintner-Cunningham Primary Mental Test and a series of seven reading-readiness tests, as follows:

Test 1. Picture Directions.—For this test the pupils were provided with three pictures in black and white: (1) a full-page farm scene, (2) a half-page town scene, and (3) a half-page scene of the interior of a general store. The test consists in reading to the children a series of descriptions, combined with directions which the pupils carry out by marking lines, circles, and crosses on the picture. The score is the number of exercises correct. Following are one of the easiest and one of the hardest of the directions.

[1] Arthur I. Gates, "The Necessary Mental Age for Beginning Reading," *Elementary School Journal*, XXXVII (March, 1937), 497–508.

[2] A. I. Gates, G. L. Bond, and D. H. Russell, assisted by Eva Bond, Andrew Halpin, and Kathryn Horan, *Methods of Determining Reading Readiness*. New York: Teachers College, Columbia University, 1939.

[3] Arthur I. Gates, "An Experimental Evaluation of Reading-Readiness Tests," *Elementary School Journal*, XXXIX (March, 1939), 497–508.

There is a barn in this picture. Find this barn and draw a big circle around it, like this. [Examiner draws a circle on the board.]

On one of the shelves [in the store picture] you will see some loaves of bread and some fancy cakes. On another shelf you will see some dishes—cups, saucers, plates, and other dishes. Put one cross on the loaves of bread, put two crosses on the cakes, and put three crosses on the shelf with all the dishes.

Test 2. Word Matching.—The pupil is given a page of eighteen exercises similar to that shown below. The pupil draws a line between the two identical words. The score is the number correct.

dress	draw
draw	drum

Test 3. Word-Card Matching.—The pupil is given a page containing twenty boxes like the following:

place	plant	play	blue

The teacher exposes for five seconds a class-size card on which one of the words is hand-printed in large letters. The pupil draws a line around the same word on his sheet. The score is the number correct.

Test 4. Rhyming.—The pupil is given a page consisting of a series of rows of four pictures each. Each picture represents an object, such as *hat, dog, cup, horse.* The names of the objects are stated, and the pupil is then given a word (*pup*) which rhymes with one of them (*cup*). The pupil marks the picture of the *cup* with a cross. The score is the number correct. The test was designed to measure the child's familiarity with, and sensitivity to, the sounds of spoken words—an ability found to be useful in the phonetic activities in the initial stages of reading. The score is the number correct.

Test 5. Blending.—This test consists of a page of rows of object pictures, four in each row. The names of the objects are given, and then the name of one of them is sounded, with short pauses between the constituent sounds. Thus, for the four pictures *broom, bowl, bread, bird,* the key word-blend is *br-ea-d.* The pupil puts a cross on the picture. This test, like the preceding, is designed to reveal the pupil's knowledge of, and ability to deal with, constituent word elements. The score is the number correct.

Test 6. Letter Matching.—This test consists of twelve exercises similar to the following:

a	p	t
r	t	j
l	k	f

Half are composed of capital and half of lower-case letters. The task is to draw a line between the two identical letters. This test was introduced as a possible substitute for Test 7.

Test 7. Letter and Number Naming.—This test consists of the capital letters in irregular order, followed by the lower-case letters in a different order, and, finally, by the digits *0* to *9* in irregular order. The child is asked to read or "name" the letters and numbers. In Tests 6 and 7 the score is the number correct.

The seven tests include those found in the preceding studies and in other recent investigations[1] to sample the most important aspects of the ability underlying the processes of learning to read in the primary stage. The first test reflects ability to perceive and interpret pictures; to understand concepts related to common situations in country, town, and store; to keep the mind on what the teacher says; to remember and carry out directions in a classroom-like activity. The second and the third tests reflect the pupil's status in word perception and discrimination for words both in primer-book and in classroom-chart or blackboard size and character. The fourth and the fifth tests reflect attainments not in the visual but in the auditory (phonetic) aspects of words. The sixth and the seventh are concerned with the visual elements of reading matter. The previous studies, mentioned above, show that in many classes knowledge of the letters gives correlations with reading achievement which are among the highest of all the many tests used. These two tests reflect the influence of a wide variety of previous experiences with printed materials and the degree of advancement of skill in seeing the visible elements of word forms.

[1] Especially in the fine series conducted by Frank T. Wilson, Cecile White Flemming, I. C. Sartorius, C. G. Garrison, Agnes Burke, and others in the Horace Mann School of Teachers College, Columbia University. A brief summary of findings is given in "Reading Progress in Kindergarten and Primary Grades," *Elementary School Journal*, XXXVIII (February, 1938), 442–49.

One test, shown by a previous study to be among the best for predicting reading,[1] is not included: the test of ability to listen to, and to grasp the content and structure of, a typical story. It was not included for the sole reason that the writer has found no satisfactory objective test for this ability. A test based on telling the pupil the first half of a story and asking him to complete it has been tried out, but this test requires a personal judgment of the general merit of the completion of the story and is, in this sense, subjective.

THE SUBJECTS

The subjects were the entering pupils in eight New York City public-school classes. The total term register showed 218 pupils. Of these, 173 were available for all tests during the testing period, which was usually completed in a few days in each class. Practically all testing was done in the third and the fourth weeks of the school term.

Reading ability was measured during the last ten days of the term by means of the Gates Primary Reading Tests, Type 1, Word Recognition, and Type 2, Sentence Reading. The mean of the two grade scores is the criterion of reading ability.

All tests were given and scored by proficient examiners: Mrs. Ruth Beebe, Mr. Gelolo McHugh, and Mr. Harold J. McNally. All statistical analyses were made by the statistical staff of the Institute of Educational Research of Teachers College, under the immediate charge of Professor Irving Lorge.

For computing the intercorrelations of the various reading-readiness tests and the Pintner-Cunningham Primary Mental Test, all pupils having complete records, with the exception of foreign children handicapped by lack of familiarity with spoken English, were assembled in one group. The total number was 173.

The correlations of the readiness and the intelligence tests with reading attainments at the end of the term were computed for individual classes. The computing was done by classes for the following reasons: (1) The time intervals between the administering of both the predictive and the achievement tests varied by as much as slightly more than two weeks among the classes, although the intervals for pupils within a class rarely varied as much as one week. (2) Reading was begun at different times and was taught in different

[1] A. I. Gates, G. L. Bond, and D. H. Russell, *op. cit.*

ways for different amounts of average daily time and by teachers of varying skill in the several classes. For computing the correlations between the various tests and reading attainments within each class, only those pupils who had taken all the tests and had less than six days' absence during the term were kept. The total number was 133.

BASIS FOR ELIMINATING ONE OF THE WORD-SOUND TESTS

Our previous studies had shown that several tests of ability to deal with the sound characteristics of words gave similar results. Of several tests (giving words with the same initial sounds, giving

TABLE 1

CORRELATIONS OF TEST 4, RHYMING, AND TEST 5 BLENDING, WITH OTHER TESTS AND WITH MENTAL AND CHRONOLOGICAL AGES (173 CASES)

Variable Correlated	Rhyming Test	Blending Test
Rhyming Test	.61	.44
Blending Test	.44	.45
Picture Directions Test	.36	.32
Word Matching Test	.26	.31
Word-Card Matching Test	.25	.28
Letter Matching Test	.32	.27
Letter and Number Naming Test	.22	.19
Mental age	.38	.30
Chronological age	.04	.06

sounds for letters, giving letters for sounds, repeating word sounds, distinguishing like and unlike sounds, etc.), the two best, all things considered, seemed to be the rhyming and the blending tests. These had previously given very similar results. Both were used in the present study to yield certain further information of value in constructing a team of tests. In this study each of these tests consisted of seven exercises. Certain correlations are given in Table 1.

The correlation of each of these two tests with itself was determined by correlating the split halves and correcting the coefficient by the Spearman-Brown formula. The reliability coefficient of .45 for the Blending Test is no greater than the correlation of the Blending with the Rhyming Test, which is .44. The correlations of the two with the other variables are substantially the same.

These two tests are too short to give a satisfactory degree of reliability. The question arose whether it would be better to keep both and use the combined score or to eliminate one and increase the length of the other sufficiently to give it the reliability desired in such a battery. There is little to choose statistically or pedagogically between the two alternatives. It was decided, in constructing one battery, to do the latter. The Rhyming Test was retained because it can be administered somewhat more uniformly by different examiners and its reliability coefficient is somewhat higher. In the final battery this test was increased in length to give it a reliability as high as seemed practical and about equal to the other tests in the series. In computing the correlations of the tests with reading attainments, the data for the Blending Test were omitted since they would necessarily give about the same results as the Rhyming Test.

COMPARISON OF TESTS OF LETTER MATCHING AND LETTER AND NUMBER NAMING

Test 6, Letter Matching, was included to see whether it might be substituted for, or added to, Test 7, Letter and Number Naming, with profit to the battery. The naming or, really, the reading of the letters had proved in the earlier studies to be of relatively high predictive value. The only weaknesses of the test were, first, that it must be administered to one pupil at a time and, second, that a number of children obtained zero scores. The new test, in which letter-matching is substituted for letter-reading can be given to small groups, and practically all children will be likely to obtain a positive score. The important question is whether the new test really measures the same abilities as those which made the letter-reading test so useful in prediction. Table 2 gives the correlations of each with other tests.

The self-correlation (split halves corrected by Spearman-Brown formula) for Test 7, Letter and Number Naming, is very high (.96), higher than the self-correlation of Test 6, Letter Matching (.83). It is obvious, however, that these two tests measure quite different abilities since the correlation of the two is only .26, far lower than the self-correlation. Here is a beautiful example of one of the pitfalls in test construction. To the observer it may *seem* that the ability to recognize (read) the letters is the ability, and probably

the only ability, involved in Test 6, Letter Matching. The experimental test shows beyond a doubt, however, that such is not the case. On the whole, Test 7, Letter and Number Naming, shows

TABLE 2

CORRELATIONS OF TEST 6, LETTER MATCHING, AND TEST 7, LETTER AND NUMBER NAMING, WITH OTHER TESTS AND WITH MENTAL AND CHRONOLOGICAL AGES (173 CASES)

Variable Correlated	Letter Matching Test	Letter and Number Naming Test
Letter Matching Test	.83	.26
Letter and Number Naming Test	.26	.96
Picture Directions Test	.37	.33
Word Matching Test	.44	.42
Word-Card Matching Test	.40	.31
Rhyming Test	.32	.22
Blending Test	.27	.19
Mental age	.52	.43
Chronological age	−.03	−.05

TABLE 3

CORRELATIONS, FOR FIVE CLASSES CHOSEN AT RANDOM, OF READING ABILITY WITH TEST 7, LETTER AND NUMBER NAMING, WITH AND WITHOUT THE TEN DIGITS

CLASS	CORRELATION WITH TEST 7	
	With Letters and Numbers	With Letters Only
1	.67	.64
2	.68	.66
3	.50	.48
4	.44	.44
5	.41	.39

lower correlations with all the other reading-readiness tests in the series and also with the Pintner-Cunningham intelligence test. Test 7, in other words, adds more *distinctive* factors to the battery than does Test 6. The reliability of Test 7 is higher also, and in previous studies its high correlation with reading progress has been demon-

strated. *What* it measures, moreover, is much more clear than is the case with Test 6, which includes unknown factors over and above mere recognition of the letters. Test 7, Letter and Number Naming, should obviously be retained because of these merits—provided only that the addition of the numbers does not reduce its value.

Addition of the numbers gave the test somewhat greater reliability and was of special value in reducing undistributed zero scores. This result was due to the fact that the numbers were somewhat better

TABLE 4

MULTIPLE CORRELATIONS, FOR FIVE CLASSES CHOSEN AT RANDOM, OF READING ABILITY AT END OF TERM AND (1) MENTAL AGE PLUS SCORES ON ALL READING-READINESS TESTS AND (2) MENTAL AGE PLUS SCORES ON READING-READINESS TESTS EXCEPT TEST 6

CLASS	MULTIPLE CORRELATION WITH MENTAL AGE PLUS TESTS	
	Including All Tests	Omitting Test 6
1	.931	.911
2	.815	.814
3	.669	.664
4	.637	.628
5	.765	.696

known than most letters to the beginning pupils. It was found, moreover, that the addition of the ten digits increased the correlation with reading achievement, as is shown in Table 3, which gives results for five individual classes chosen at random.

The possibility that Test 6, despite the fact that it does not measure the same abilities as Test 7, may gauge other highly valuable factors in reading readiness is best explored by comparing the multiple correlations of all the tests used, both with and without Test 6, and reading attainments at the end of the term. These figures, shown in Table 4, indicate that Test 6, Letter Matching, adds too little to the other tests to justify the time and the expense required to give and to score it.

COMPARISON OF TESTS OF WORD MATCHING AND WORD-CARD MATCHING

Both the Word Matching and the Word-Card Matching tests involve perception of total word forms. Between them is an im-

TABLE 5

CORRELATIONS OF TEST 2, WORD MATCHING, AND TEST 3, WORD-CARD MATCHING, WITH OTHER TESTS AND WITH MENTAL AND CHRONOLOGICAL AGES (173 CASES)

Variable Correlated	Word Matching Test	Word-Card Matching Test
Word Matching Test	.78	.65
Word-Card Matching Test	.65	.82
Picture Directions Test	.35	.27
Rhyming Test	.26	.25
Letter and Number Naming Test	.42	.31
Mental age	.64	.51
Chronological age	−.08	.00

TABLE 6

MULTIPLE CORRELATIONS, FOR FOUR CLASSES CHOSEN AT RANDOM, OF READING ABILITY AND (1) MENTAL AGE PLUS SCORES ON TESTS 1, 2, 3, 4, AND 7 AND (2) SAME, OMITTING TEST 3

CLASS	MULTIPLE CORRELATION WITH MENTAL AGE PLUS TESTS	
	Including Test 3	Omitting Test 3
1	.910	.862
2	.814	.763
3	.664	.613
4	.628	.573

portant educational difference. In Test 2, Word Matching, the task is to find and match two words, both printed in type of primer-book size and both visible at once, whereas in Test 3, Word-Card Matching, one word, shown at a distance in hand-drawn letters of large,

class-chart size, must be matched with a word printed in type of primer-book size after the first is removed from sight. The one test corresponds to an individual workbook assignment, the other to an assignment to *transfer* learning from a class-chart, word-card, or blackboard exercise to typical book material. Whether there is a practical distinction for diagnostic and predictive purposes in testing, however, must be decided on the basis of practical data. Table 5 shows comparative correlations.

Since the correlation between the two tests is clearly lower than the correlation of each with itself, the two tests measure distinctive abilities. Table 6 shows, moreover, that each adds something to the multiple correlation with reading attainment not given by the other or any other test, including the intelligence test. The value of the increase in prediction is, in the end, a matter of personal judgment. The writer believes that it is great enough to justify the costs of the additional test in this case.

VALUE OF TEST OF PICTURE DIRECTIONS

Test 1, Picture Directions, is not, superficially, similar to any other in the series. Various correlations of this test with others are given in Table 7. This test correlates much higher with itself than with any other variable. The next highest coefficient (.64) is with mental age on the Pintner-Cunningham test, but the two tests are by no means measures of identical abilities. All other correlations are below .47. It is unlikely, therefore, that this test is essentially a duplicate measure of any other of the abilities tested in this battery.

CORRELATIONS OF INDIVIDUAL TESTS WITH READING ABILITY AT END OF THE TERM

Table 8 presents the correlations of the several tests with reading ability at the end of the first term in each of seven classes. A previous study[1] shows that correlations yielded by similar reading tests are not as high when reading attainments are measured at the end of the first term as when measured at the end of a full year, probably because reading abilities are more stabilized and also more reliably measured by standardized tests at the end of the year than at the end of the term. Thus, had a full year transpired between the readi-

[1] A. I. Gates, G. L. Bond, and D. H. Russell, *op. cit.*

ness and the achievement testing, higher correlations would be expected in Table 8.

The mean correlations range from .47 to .28. The lowest figure is that given by the Rhyming Test. This low correlation is partly due to the fact that the form of this test used in this study is much shorter and hence less reliable than the others. In the revision of the

TABLE 7

CORRELATIONS OF TEST 1, PICTURE DIRECTIONS, WITH OTHER TESTS AND WITH MENTAL AND CHRONOLOGICAL AGES (173 CASES)

Measure Correlated	Correlation	Measure Correlated	Correlation
Picture Directions Test	.84	Letter and Number Naming Test	.33
Word Matching Test	.35	Mental age	.64
Word-Card Matching Test	.26	Chronological age	−.08
Blending Test	.46		

TABLE 8

CORRELATIONS, FOR SEVEN CLASSES, OF READING-READINESS TESTS GIVEN AT THE BEGINNING OF TERM WITH READING ABILITY AT END OF TERM (OR HALF-YEAR)

Test	Class							
	1	2	3	4	5	6	7	Mean
Picture Directions	.14	.62	.43	.43	.27	.33	.25	.35
Word Matching	.63	.51	.57	.23	.32	.35	.51	.45
Word-Card Matching	.62	.72	.59	.41	.05	.34	.58	.47
Rhyming	.21	.30	.43	.13	.39	.02	.47	.28
Letter and Number Naming	.70	.50	.45	.27	.41	.20	.68	.46
Mental age	.57	.39	.54	.52	.33	.39	.41	.45

battery, now in use, this test is 2.13 times as long. Had the later form of the Rhyming Test been used, the mean correlation would have been appreciably higher. Taken alone, the Word Matching, the Word-Card Matching, and the Letter and Number Naming tests give slightly higher correlations than the Picture Directions and the Rhyming tests. The latter add, however, distinctive diagnostic features to the series and increase the predictive value of the battery as a whole. In the earlier study, in which very similar tests were used, the means of the correlations of seven classes were: Word Matching,

.58; Word-Card Matching, .55; Picture Directions, .48; Letter Naming, 43; and Rhyming, .28. The means of these two studies, which would include fourteen classes, are: Word Matching, .52; Word-Card Matching, .51; Letter Naming, .45; Picture Directions, .42; and Rhyming, .28. As will be seen later, the predictive value of a test varies somewhat from class to class depending on the pupils' equipment and the nature of the instruction. Thus the order of the average correlations is not duplicated in every class, as is apparent indeed in Table 8.

The Pintner-Cunningham Primary Mental Test predicts reading attainment about as well as the *median* individual reading-readiness test. As will be pointed out later, the Pintner-Cunningham, itself a battery of seven tests, does not predict reading attainment as well as the battery of five reading-readiness tests. Whether such a test as the Pintner-Cunningham adds materially to the predictive value of the reading-readiness battery will be considered later.

PREDICTIVE VALUE OF THE READING-READINESS TEST BATTERY AS A WHOLE

Multiple correlations of the five tests finally included in the reading-readiness battery, when given in the third and fourth weeks, with reading ability measured at the end of the term were computed for seven classes separately. These figures indicate approximately, in terms of correlations, the success of the total score from the five tests in predicting reading ability four months later. They are as follows: .89, .81, .78, .69, .61, .59, .57; mean, .706. When it is recalled that, for reasons given above, these correlations would doubtless have been higher if reading achievement had been measured at the end of the full year, instead of the half-year, and if the longer and more reliable Rhyming Test constructed for the final battery had been used, it is apparent that these figures are, in comparison with other predictive devices now used in education, very high. They show the battery to have genuine usefulness for predictive purposes.

VALUE OF USING BOTH THE READING-READINESS BATTERY AND THE GROUP INTELLIGENCE TEST

The multiple correlations of the reading-readiness tests combined with the Pintner-Cunningham mental age were computed for the same groups. The coefficients are given in Table 9.

The reading-readiness battery excels the Pintner-Cunningham mental age in every comparison; the mean for the former, .706, is appreciably higher than the .45, approximately, for the latter. The group mental test is a more general measure with values for other phases of educational guidance. The reading-readiness test, although doubtless more restricted, gives a far better prediction of reading progress because of its development for this specific purpose.

The means show that the use of the Pintner-Cunningham mental age increases the prediction of the reading-readiness test, however,

TABLE 9

CORRELATIONS, FOR SEVEN CLASSES, OF READING ABILITY WITH (1) PINTNER-CUNNINGHAM MENTAL AGE, (2) READING-READINESS BATTERY ALONE, AND (3) READING-READINESS BATTERY COMBINED WITH PINTNER-CUNNINGHAM MENTAL AGE

MEASURE CORRELATED	CLASS							
	1	2	3	4	5	6	7	Mean
Pintner-Cunningham mental age	.57	.39	.41	.54	.52	.32	.39	.449
Reading-readiness battery	.89	.81	.78	.69	.61	.59	.57	.706
Reading-readiness battery combined with Pintner-Cunningham mental age	.93	.82	.80	.69	.67	.64	.77	.760

from a mean of .706 to .760. In Class 4 the increment is less than .01; in two classes, it does not exceed .02; but in others it is greater.

Again, a practical recommendation concerning the advisability of using both tests for entering pupils cannot be derived objectively from these figures. They would afford, however, a good defense for using two tests of these types, one for general and one for specific guidance of children. There is much more in the first-grade curriculum than reading, and there is much more in reading ability than will be foretold by the group intelligence test. Each test supplements, without supplanting, the other.

In another study the Stanford-Binet mental age was used, along with an essentially similar series of reading-readiness tests[1] and gave similar results. It appears that both the Stanford-Binet individual

[1] Arthur I. Gates, "An Experimental Evaluation of Reading-Readiness Tests," *Elementary School Journal*, XXXIX (March, 1939), 497–508.

test and the Pintner-Cunningham group test give a prediction of reading progress about equal to that of the median single test in the reading-readiness battery. This finding would imply that the mental age should be given about the same weighting in predicting reading progress as the typical individual reading-readiness test and not a weighting equal to the entire battery.

RELIABILITY OF THE TESTS

Reliability coefficients were computed by obtaining the correlations between odd and even items and applying the Spearman-Brown correction formula for a population of 173 pupils. The same

TABLE 10

RELIABILITY COEFFICIENTS FOR 1937–38 EDITION AND FINAL 1939 FORM OF GATES READING READINESS TESTS

Test	1937–38 Tests (182 Cases)	1939 Tests (173 Cases)	Estimated Reliability Coefficient
Picture Directions	.86	.84	.85
Word Matching	.86	.78	.82
Word-Card Matching	.88	.82	.84
Rhyming	.84	.84	.84
Letter or Letter and Number Naming	.81	.96	.96
Composite score	.966	.974	.98

coefficients were obtained in the preceding year for a population of 182 pupils in a small city for the 1937 edition of the tests. The earlier editions of the Word Matching and the Word-Card Matching tests were essentially the same as the 1939 editions except that the particular items (words) were different. The 1939 edition of the Picture Directions Test is slightly longer, and the latest form of the Letter and Number Naming Test contains the ten digits in addition to the twenty-six letters, the reliability being thus increased. The coefficient for the Rhyming Test is corrected for the greatly increased length of the final form of this test over the form used in the 1939 study. The figures are given in Table 10.

The variations, with the exception of those which, as explained above, result from changes in the tests, are probably due to differ-

ences in various characteristics of the two populations and to chance. For the Word Matching, the Word-Card Matching, and the Picture Directions tests, in which no general changes were made, the mean of the two coefficients is probably the most reliable estimate. The increase in length and the change in character of the Letter and Number Naming Test make it advisable to use only the 1939 figure. The reliability coefficient of the whole final test is very close to .98. Actual computation gives .974 without full allowance for the increase in length of the Rhyming Test.

WEIGHTING THE TESTS IN THE COMPOSITE SCORE

Essentially the same types of tests used in this study were employed in an earlier investigation[1] although the particular items (words, rhymes, pictures, etc.) were different. Averaging the means of the figures obtained in the two studies, which included seven classes in each, or fourteen in all, the following correlations with reading ability at the end of the term were secured: Word Matching, .52; Word-Card Matching, .51; Letter Naming, .45; Picture Directions, .42; and Rhyming, .28. The Rhyming Test in the final battery is 2.13 times as long as the ones used in the two studies. The resulting increase in reliability would increase the correlation appreciably. The Letter and Number Naming Test in the final battery is also more reliable and predictive than the one used in the first study. The Picture Directions Test is slightly more reliable. Study of the contribution of the several tests to the predictive value of the whole battery by multiple correlation indicates that, when allowances are made for these increases in reliability, the various tests contribute about equally to the prediction of reading progress made by the battery as a whole. Hence in practical use of the battery[2] it is recommended that the several tests be given the same weighting in computing a composite or total score. The recommended procedure is to convert the raw scores into percentile scores and use the mean of the percentile scores as a composite.

[1] *Ibid.*

[2] Arthur I. Gates, Gates Reading Readiness Tests. New York: Teachers College, Columbia University, 1939.

READINESS FOR ARITHMETIC

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*

WITHIN the present century, and primarily within the past decade, a change has taken place both in the philosophy and in the psychology of education. The philosophy of education has changed from a narrow emphasis on social utility, springing from the economic motive, to a much broader emphasis on the growth and the development of the personality. Strictly speaking, the new emphasis includes the social-utility objective as one part of this broader objective (14). Similarly, the change in psychology applied to education has been from a narrow, mechanistic conception of the learning process to a broad organismic concept of the learning and the creative processes, which is emphasizing the roles of maturation, goal, and insight in contrast to repetition engineered under satisfying and annoying hedonic tones. As evidence of this change one needs only to point to the increasing number of books, magazine articles, speeches, and systematic courses which treat the organismic or Gestalt psychology. These changes in philosophy and psychology are probably due to the significant changes that are taking place in the social soil in America (11), and they may be thought of as differentiating out of this changing frame of reference in the social fabric.

Education, too, is rapidly changing its emphasis in the direction of vigilant insistence on meaningful experience as the true picture of all sound learning (12). This insistence on meaning and understanding on the part of the learner has led once more, with modifications to be sure, to the genetic point of view in the science and technology of child growth and development (8, 19, 22).

The combined effect of the changes in philosophy, psychology, and education over the past ten years has been to direct attention to a search for the various levels of maturation, or stages of readi-

ness, in the learner. Workers interested in the teaching of reading have made a head start in this matter (17). Workers interested in the teaching of arithmetic are now becoming keenly interested in grade placement of arithmetic, or arithmetic readiness (2, 3, 4, 5, 6, 10, 16, 24, 28, 29, 31).

The first problem in arithmetic readiness is to turn to the psychological evidence justifying the general acceptance of the maturation hypothesis—a hypothesis which assumes that certain modes of behavior are inherited and are not capable of performance until inner growth and development have taken place. Parenthetically it may be said that opposed to this point of view is the hypothesis that all forms of behavior are the result of learning. Here, "all forms of behavior" as well as "certain modes of behavior" include mental, physical, emotional, and social behavior, together with their multifarious integrative patterns. The experiments of Carmichael (7) with frogs and salamanders, of Spalding (25) on birds, of Coghill (9) on the Amblystoma, of Jersild (18) on children between the ages of four and six, of Strayer (26) with a pair of identical twins, and a large group of other studies summarized by Gesell (23: 209–35) and Bühler (23: 374–416) lead one to accept and greatly to appreciate the maturation hypothesis as a rather fundamental hypothesis upon which to work. These numerous experiments cover all forms of behavior and consequently provide for the educationist ample justification for his concept of arithmetic readiness.

Readiness is a concept designed to tie together the overt behavior (symptoms) of the learner with the inner dynamics of maturation. Figuratively speaking, it is the bridge connecting the observable behavior of the learner with the organized covert behavior operating on his level of maturation. With these concepts as a *modus operandi* we are ever led to look deeper into the learner's behavior than his overt, desultory behavior. We assay the level of meaning and the pupil's understanding of the material that he is trying to learn.

Educators and psychologists have already attacked the problem of arithmetic readiness in a number of ways. A first approach has been that of the Committee of Seven under the direction of Carleton W. Washburne (27). This approach, that of evaluation by use of objective measuring instruments and by the study of errors made

on these tests, has dominated most of the work and thought on the topic of grade placement. The basic and crucial fallacy of this approach is that correct, overt responses, in the form of objective-test results of a somewhat desultory nature, are taken as rather valid and reliable symptoms of the learner's inner organized thinking which for him is both meaningful and understandable. With the trial-and-error concept of learning, executed under a drill program emphasizing efficiency as an outcome, we are certain to be deceived when such results are taken as evidence of growth in organized quantitative thinking. As a consequence the findings indicate that systematic instruction should begin at once, that is, as soon as the child enters school.

The second approach is that of grade inventories, such as those of Benezet (1), MacLatchy (20), McLaughlin (21), Woody (31), and others. Most of these have been done at the first-grade level. Here, too, the basic and crucial fallacy is identical with that made in the first approach, namely, that objective results on items of a somewhat desultory nature, usually learned under parental pressure, are a valid and reliable index of the levels and the growth of meaningful quantitative thinking. The conclusions reached by these surveyors is about equally divided between beginning systematic instruction at once and postponing it even as late as Grade VI.

The third approach is that of the control-group and experimental-group procedure, in which attempts are made to determine the relative advisability of formal instruction in arithmetic and of postponement of the entire subject viewed as a summation of various topics placed in various grades. The conclusions of most of these experiments call for postponement of the great majority of the topics, such as addition of whole numbers and long division. Once more, the basic and crucial fallacy is that objective results of a more or less desultory nature are a valid and reliable index of the organized and meaningful quantitative thinking enjoyed by the learner.

Each of these three approaches assumes that the "whole" is no more than "the sum of the parts," the "whole" being the learner's organized quantitative thinking at his level of maturation and "the sum of the parts" being his gross score on an objective test or the summation of his scattered daily uses revealed in inventories. The results from tests and inventories have their place as a *means*, not

as an *end* as they have been used in these three approaches to the problem of readiness for arithmetic.

The job of getting valid and reliable symptoms of arithmetic readiness is a task scarcely touched at present. Russell (24) and Tew[1] have some insight into the approach, which requires the best intuitive sense (30) of an experienced teacher working in the classroom and possessing an extreme sensitiveness to the manifold and expressive kinds of behavior symptomatic of the learner's organized, and therefore meaningful, quantitative thinking done at his level of maturation. Most of the experimental work done only beclouds the main issue, namely, sensing the readiness of the learner to do a given degree of quantitative thinking with meaning on his level of maturation. The best observation which can be made by the classroom teacher while in the process of teaching is the evidence to be used to determine arithmetic readiness on the part of the learner, but very little of this observation has been used to help solve the problem of readiness for arithmetic. The experienced teacher, aware of the problem of arithmetic readiness and the concepts involved, is the key to the entire situation.

The evidence given by Russell (24) indicates that for young children the basic meaningful ground is that of *manyness*, which appears around the age of four and one-half to five years in terms of *most*, *both*, *biggest*, whereas words denoting *same* and *equal* are not understood. Out of this pattern of insight at this stage of readiness, there gradually differentiate the abilities to count ordinal and cardinal numbers, which apparently develop simultaneously sometime after the age of seven years. This conclusion does not mean that, if by drill the ability to count by rote has been produced, the readiness to count rationally may therefore be assumed. Russell believes that the first- or second-grade learner is not likely to have matured sufficiently to insure readiness for satisfactory mastery and understanding of isolated addition and subtraction facts. Grossnickle and Snyder (16) believe that at the fifth-grade level children will understand the zero, and not before.

Other levels of readiness have been studied but little. Some of

[1] Miss Thelma Tew, of Florida State College for Women, has been working, under the direction of Professor William A. Brownell of Duke University, with the division of common fractions by the common-denominator method.

these levels might conceivably be concerned with multiplication and division of whole numbers; the interrelations of the processes of addition, subtraction, multiplication, and division of whole numbers; the meaning of fractions in relation to whole numbers; the interrelations of the four fundamental processes with fractions and whole numbers; the meaning and the role of decimal fractions and their relation to whole numbers, common fractions, and percentages.

Within each of these levels of readiness or maturation there will be found, upon investigation, many subtopics, such as the division of common fractions by the common-denominator method, as studied by Thelma Tew; division of integers entirely by the long-division form, as studied by Grossnickle (15); the choice of conceptual vocabulary of the upper grades, as studied by Downs (13); the grouping of arithmetic problems around basic patterns at different levels of maturity instead of the present "shotgun" system of presenting problems to the learner; and adequate and appropriate concrete illustrative materials for each stage of readiness or level of maturation. All these topics, and many more, are areas for research, the methods and the findings of which should do much to show the invaluable role that the classroom teacher plays in collecting, interpreting, and applying the primary data. The teacher is at once the aid to the scientist and the master technologist in the solution of the problem of arithmetic readiness.

In conclusion it may be said that with a change in the social soil has come a change in the point of view of the philosopher, the psychologist, and the educator alike. These now believe that the learner should operate on a meaningful plane of maturation or readiness in his acquisition of arithmetic. To date, little valid experimental work has been done which has cleared the ground for future work. Further investigation must not lose sight of the strategic role of the classroom teacher as both scientist and technologist at the scene of the birth of new insights.

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AN APPLICATION OF THE FERNALD METHOD TO AN EXTREME CASE OF READING DISABILITY

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THE use of tactual and kinaesthetic stimuli in education is not new. Seguin made effective use of them. Madame Montessori's reputation for successful teaching was built with the help of play equipment designed to afford opportunities for sensory discrimination and comparison. She reported phenomenal success in teaching reading by the use of letters cut from sandpaper.[1] The child traced the letter with his finger until the letter form was fixed in his memory. Grace Fernald, therefore, had historical evidence of the usefulness of kinaesthetic factors in teaching reading when she worked out the details of her method described first in 1921[2] and later in her 1936 monograph.[3]

The value of the present report lies in the fact that it describes the process of changing a school failure into a successful pupil by the modification of a single factor in the total situation, namely, teaching method.

Michael was brought for psychological examination because he could neither read nor spell and, as a result, was unable to do the work of the sixth-grade group in which he was placed. His chronological age was thirteen years and six months. On the Stanford-Binet scale he earned an average rating, with a mental age of thirteen

[1] Maria Montessori, *The Montessori Method*, pp. 269–70. New York: Frederick A. Stokes Co., 1912.

[2] Grace M. Fernald and Helen Keller, "The Effect of Kinaesthetic Factors in the Development of Word Recognition in the Case of Non-readers," *Journal of Educational Research*, IV (December, 1921), 355–77.

[3] Grace M. Fernald, *On Certain Language Disabilities*. Mental Measurement Monographs, Serial No 11. Baltimore: Williams & Wilkins Co., 1936.

years and eight months and an intelligence quotient of 102. On the Arthur Point Scale of Performance Tests he earned a superior rating, with an intelligence quotient of 120. On the Stanford Achievement Tests, Advanced Form V, he earned the following grade standings:

Paragraph meaning.....	3.5	Arithmetic reasoning.....	4.6
Dictation.....	3.1	Arithmetic computation..	4.3

Orally, he could not read a page of primer material without stumbling. Clearly, in view of his school achievement, the boy, the family, and the school had reason to feel discouraged. His intelligence ratings were no surprise, as he had never been suspected of being dull.

Vision, of course, was tested. As a small boy Michael had had an injury that had resulted in the serious impairment of the vision of one eye. Because of a slight defect in the vision of the other eye, the oculist prescribed glasses to relieve strain. Because these had never been adjusted to Michael's satisfaction, they were used only when the school and the family insisted. Whatever part defective vision played in Michael's initial difficulty in learning to read cannot be adequately estimated. The visual handicap remained unchanged throughout the period reported and will always have to be reckoned with.

Elementary-school training had been exceptionally good. For five years the boy had been in the demonstration school conducted by a state teachers' college and had received an unusual amount of individual teaching. The director of the training school, Miss Georgina Lommen, who had recommended that the boy be brought for study, commented, "He has had, perhaps, too much individual assistance." She continued, however, "We are extremely fond of the boy. He is very socially minded," and again, "One of his teachers calls him her 'walking encyclopedia of historical facts.' " Later, "We have exhausted every resource to bring him to read. He has definite and enthusiastic interest in all the good that comes from children's reading but cannot help himself."

The family had always been wholly co-operative. Everybody, including father, mother, and other adult relatives, read aloud to him, with the result that he was keenly interested in books and had an

excellent vocabulary and a much wider range of general information than the average boy of his age. The mother gave daily help with the material sent home by the school for Michael to read aloud to her. After he was well on his way to recovery, the mother was praised for the help that she had given after the new method was initiated. She replied that she had given only minutes of time to supervising home work under the new regime as compared with hours that she had devoted in other years without result. The family was encouraged to continue to read aloud to Michael during his leisure time.

Michael's own attitude toward work was good. He was eager to learn to read for himself and followed suggestions quickly and accurately. As a result of years of failure, he had little faith at first that he could learn to read by any method, but, as he found himself learning and retaining words in his reading and writing vocabulary, his enthusiasm became boundless.

On January 15, 1938, work was begun with the Fernald tracing method. The procedure, as outlined in the monograph referred to above, is simple, and we have found it effectual to exactly the degree in which details of instruction are adhered to. Each step is essential to successful therapy.

One of the writers took Michael for an hour a day, on school time, to demonstrate the effectiveness of this method of remedial teaching for a case of severe reading disability with which other modern methods had been tried without success.

Each day Michael wrote a story at home. His first story, produced with much effort and travail of spirit, is reproduced in Figure 1. Not only was it illegible to us, but two weeks later he himself had forgotten what he had been trying to say and was unable to decipher it. Translated immediately after he had written it, it said: "At Christmas vacation I got an airplane that flew by itself. Two summers ago we took a trip to the south. There we studied the battlefields of the Civil War." The gap in thought between the first and the second sentence is characteristic of the written composition of individuals who let long streams of thought flow by rather than wrestle with the task of capturing them on paper.

The daily story was checked with the boy for reading, sentence

structure, punctuation, capitalization, and spelling. He was stimulated to take pride in checking his own work. Misspelled words in the story, together with their derivatives, made up his spelling lesson for the day. The number of words learned a day varied from two on the first day to as many as forty after he had mastered the technique of tracing and had become convinced of its efficacy for him. Each day as many words from previous lessons were reviewed as time permitted. The list of words which he learned to read and to write correctly during the first two weeks included an amusing range in difficulty: from *we* to *anxious* and *Appian Way*.

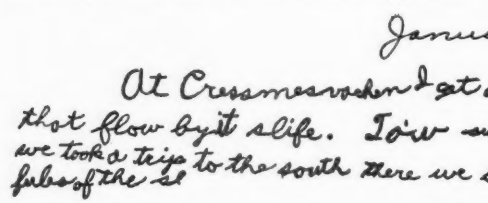

January 15, 1938
At Cressmes wekend I got an areplen
that flow by it slife. Iow summer a go
we took a teip to the south there we study the battle
fubs of the se

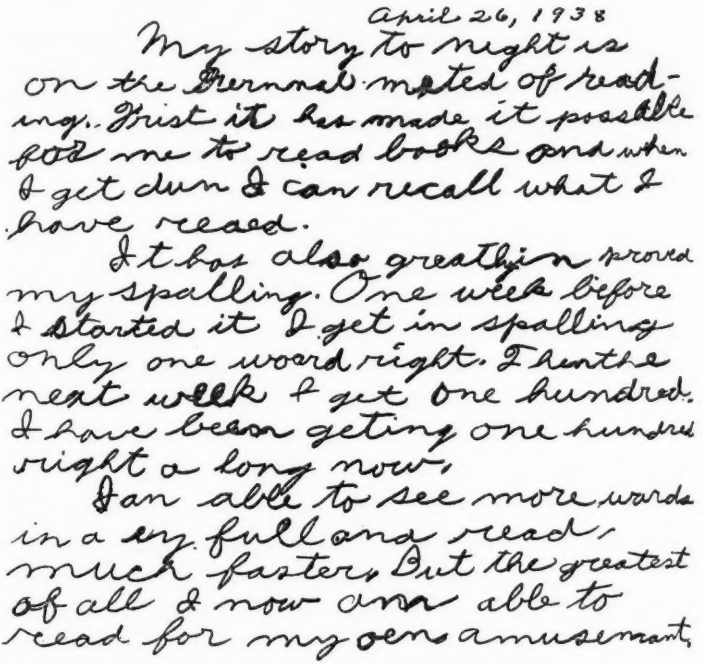
FIG. 1.—Michael's story written during his first tutoring period. This "story" represents the result of seven years of teaching with standard methods. The tutor wrote the date.

As soon as he was convinced that words learned by the tracing method could be retained, Michael asked to be allowed to learn the words assigned to his class as the spelling lesson for the week. He found it as easy to maintain an average of 100 per cent correct in the weekly spelling test with his group as he had previously found it impossible to maintain even a passing mark. His first "100" was almost too much for him. He was so excited that he could undertake only the simplest work for the rest of the day, but he soon learned to accept a perfect score as a matter of course and would have been upset by earning anything less. His record continued unbroken throughout the rest of the school year.

Reading during the tutoring hour included arithmetic story problems and at least fifteen minutes of very easy material. A trailing pencil[1] was used to insure correct direction of reading, to help form desirable habits of eye-movement, and to assist correct phrasing.

[1] Marion Monroe, *Children Who Cannot Read*, pp. 120–23. Chicago: University of Chicago Press, 1932.

With the pencil traveling along below the line being read, at the boy's own rate of speed, jerky reading became smooth, and there was no more going back to the beginning of a sentence to gain momentum. Later, for easy material a card used as a line finder re-


April 26, 1938

My story to night is on the Fernald method of reading. Frist it has made it possible for me to read books and when I get dun I can recall what I have reaed.

It has also greatly improved my spalling. One week before I started it I get in spalling only one word right. The next week I get one hundred. I have been geting one hundred right a long now.

I am able to see more words in a eye full and read much faster. But the greatest of all I now am able to read for my own amusement.

FIG. 2.—Michael's story written three and a half months after teaching by the Fernald method was begun. The tutor wrote the date.

placed the pencil. Words that Michael did not recognize at sight were supplied without allowing him to stumble and lose the thread of thought. A similar procedure was followed by the family with books brought home by him to read for pleasure.

In oral reading his most common difficulties were: (1) lack of rhythm and proper phrasing: hesitating and blocking; (2) reversals, such as *how* for *who*, *was* for *saw;* (3) failure to recognize words; (4) lack of ability to read along the line from left to right; (5) repeti-

tion; (6) omission of endings of words, such as *s, ed, t, ing;* (7) addition of a sound, such as *s, ed, t;* (8) vowel substitution, such as *begin* for *began, get* for *got;* (9) substitution of words; (10) substitution of consonants, such as *nust* for *must, cam* for *can.*

In his written work errors like the following were common: (1) vowel confusion: *geve* for *give, flash* for *flesh,* etc.; (2) consonant confusion: *grive* for *drive, das* for *gas,* etc.; (3) reversals, such as *ta* for *at, crat* for *cart, forgs* for *frogs;* (4) omission of letters: *acros* for *across;* (5) poor letter formation and difficulty in writing certain letters, such as *J, j, z, a, k,* and confusion of *m* and *n;* (6) tendency toward adding extra letters whenever he was unsure of a word, especially toward contributing a final *e* not demanded by usage.

By studying his work to determine the type of error that Michael was most likely to make, the tutor was able to anticipate points of difficulty and to avoid them by stressing the correct form in presenting the word to be traced.

Between January 15 and May 12 of the same year, Michael learned to read and to write fifteen hundred words. On April 26 he wrote the "story" reproduced in Figure 2. It shows a definite gain over his January effort in sentence structure, paragraph organization, capitalization, and spelling. Although his spelling still left much to be accomplished, he had discovered that he was able to express his ideas in writing. No attention had been paid to penmanship as such, yet Michael's writing had improved from a rating of 20 on the Ayres scale in January to a rating of 50 in April.

Between January 15 and May 12, 1938, he read twenty-four books aloud at home to members of his family. These included eleven of the Petersham series, *Tales from Far and Near* by Arthur G. Terry, and other supplementary social-science material. On June 11 a retest in school achievement was given. On the Stanford Achievement Test, Advanced Form V, he earned the following grade standings:

Paragraph meaning	5.4	History and civics	4.9
Word meaning	3.9	Arithmetic reasoning	4.6
Dictation	4.5	Arithmetic computation	4.3
Literature	6.8		

A comparison of these ratings with those earned by Michael in the previous December confirmed the opinion of the school that he had

been making rapid progress in both reading and spelling. On the basis of this achievement he should have felt that he had earned a long summer vacation. However, nothing had been done to bring his arithmetic up to grade. Arrangements were made with a tutor near his summer home to coach him daily in arithmetic. Michael also read aloud to this tutor a half-hour each day. On August 27 another retest was given. On the Stanford Achievement Test, Advanced Form W, he earned the following grade standings:

Paragraph meaning.....	4.1	Arithmetic reasoning.....	7.1
Dictation.....	4.1	Arithmetic computation..	7.2
History and civics.....	4.9		

The arithmetic was up to grade, but, with the discontinuing of tutoring by the highly specialized methods that had been used to help him begin to learn, reading and spelling began to slip in spite of the fact that oral reading became more smooth with the continued daily practice.

This rapid loss of material learned but not completely fixed in memory is characteristic of most cases of severe reading disability which the writers have attempted to train. The child with a special reading disability cannot take any vacations from intensive teaching without a loss of ground, the regaining of which requires weeks or months of special work. Interestingly enough, to convince the child who is suffering from the disability of the need of continued effort is easier than to convince the parents or the school. Most cases of ultimate failure result from discontinuing help as soon as the child shows that he is able to respond to special teaching instead of continuing until he is able to get along without it.

Fortunately Michael's family was eager to provide him with all the help that he needed. In the school year 1938–39 he again received help from the tutor of the previous winter, but he was tutored only twice a week and during his free time instead of during the regular school session. He gained back what he had lost during the summer and continued to gain in spelling, but he made his greatest gain in increasing his speed in silent reading. By the following June he was able to read rapidly enough to earn a score in literature that reached the ninth-grade norm. It was obvious during this test that his eyes became fatigued when he tried to read rapidly. He was

again urged to return to the oculist to try to find glasses that offered some relief from strain.

As Stanford-Binet ratings are often affected by a reading handicap, a retest was given eighteen months after the first rating had been obtained. The rating on the Binet retest agreed with that obtained with the Point Scale of Performance Tests on the date of the first examination; it had reached the level of superior, with an intelligence quotient of 122.

During the present school year Michael has carried his eighth-grade work without help. His mother reports, "He does not worry about his school work any more." He played football in the autumn. The marks on his report card have been "B's" and "C's" except a "D" in mathematics. Two years ago this same boy was unable to read or write. This point is emphasized because his intellectual organization remains unchanged. He wants to study Latin next year. It is safe to allow him to do so only because there is a tutor available who will help him to master a Latin vocabulary by the use of exactly the same methods that were used in teaching him to read and write English.

The writers wish to reiterate that this report seems to them to be of value because all the factors were favorable to learning, yet no learning could occur until a method was applied which was suited to the intellectual idiosyncrasy of the individual boy.

BLOCK PLAY—AN ESSENTIAL

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*

THE major theses of this article are (1) that, if the objectives of nursery school, kindergarten, and Grade I are to be achieved to a desirable degree, block play is extremely important and (2) that the nature of the objectives and the limitations of other materials which can be handled at these levels render blocks a first requirement.

MATERIALS TO BE USED ARE DETERMINED BY OBJECTIVES SOUGHT

Blocks have for so long been considered toys that schools have been slow to introduce them as a regular part of the equipment. As long as the first grade was viewed almost entirely as a place to acquire the three R's and the kindergarten largely as a preparatory extension of Grade I, block play was, of course, unnecessary if not actually out of place.

In Table 1 are listed many of the goals which are now advanced for the earliest levels by experts in child development and by agencies specializing in the preparation of teachers and the education of parents. Even a cursory reading of this list should suffice to show that present-day goals for the three earliest levels are almost entirely nonacademic.

A great deal more is known now than formerly about the ability of children to acquire readily certain types of information at certain levels, about the undesirable effect of too early a start, about the relation of children's mental and physical health to their present and future success and happiness, about the relation that children's adjustment to one another and to adults bears to their present and future success and happiness, and so on. All this newly acquired knowledge points to one thing: the school must begin to work for the realization of objectives such as those indicated in Table 1 as soon as

children enter school and must continue to emphasize these objectives throughout the grades.

Differences in goals for the various early levels are largely those of degree rather than of kind. As the table shows, most goals which are

TABLE 1

OBJECTIVES FOR EARLIEST YEARS OF ORGANIZED EDUCATION AND EMPHASIS TO BE PLACED ON EACH

Objective	Nursery School*	Kindergarten	Grade I
1. Mental and physical health generally	Begin	Stress	Stress
2. Muscular development and co-ordination	Begin	Stress	Stress
3. Development of ability to look after one's self (clothes, finding one's way, crossing streets, etc.)	Begin	Stress	Keep in mind
4. Development of self-control	Begin	Stress	Stress
5. Development of ability to work and play amicably and constructively with other children	Begin	Stress	Stress
6. Purposeful activity, whether in a group or alone	Begin	Stress	Stress
7. Development of ability to evaluate and to solve problems	Begin	Stress	Stress
8. Perception of similarity and difference	Begin	Stress	Keep in mind
9. Development of initiative and resourcefulness	Begin	Stress	Stress
10. Development of independence of thought and action	Begin	Stress	Stress
11. Development of imagination and curiosity	Begin	Stress	Stress
12. Development of the desire and the ability to express one's self (to convert ideas into tangible form)	Begin	Stress	Stress
13. Extending experiences into, and securing understanding of, environment	Begin	Stress	Stress
14. Development of appreciation of color, form, sound, and movement	Begin	Stress	Stress
15. Development of ability to use tools:			
a) Oral language	Begin	Stress	Stress
b) Written language†	.....	.....	Begin
c) Number†	.....	.....	Begin
d) Reading†	.....	.....	Begin

* The word "begin" is used for the nursery school because that is the first level. In strength of emphasis it is similar to "stress."

† Anything which would be done in the first two levels in developing these tools would be so rudimentary and unplanned that it is best to disregard them as objectives as far as this article is concerned.

stressed in nursery school or kindergarten are still highly important in Grade I. There are several reasons for this continuing importance.

For one thing, the emphasis to be placed on any objective in successive levels depends, in large measure, on the attention given to it in preceding stages. Few school systems have nursery schools, and those not having them must begin in the kindergarten to work on all

objectives listed, except Objective 15, and must place greatest emphasis on them there. Because many children do not attend nursery schools even when available, it is necessary to extend the nursery-school emphasis into the kindergarten on an individual basis. The same conditions are operative, but to a lesser degree, in the case of the objectives of Grade I. For many children the first-grade teacher must attempt to do in the short space of one year that which requires three years to accomplish properly.

Second, even for children who have had the benefit of nursery-school and kindergarten education there is still need to continue in Grade I with many of the same goals. No child achieves maximum muscular co-ordination by the end of kindergarten. Many children in Grade I have serious adjustment difficulties, and so on down the list. It is not sensible to cease emphasizing in Grade I, or in Grade II or III for that matter, certain goals which are important prior to Grade I, just because it has been traditional to consider Grade I as the place where formal education in the three R's begins.

Third, Grade I is properly a transitional grade. Unless a child develops more rapidly than do most children, he is not ready to be freed from emphasis on the objectives of the pre-first-grade level; he has not acquired a sufficient background of experience on which to base a start in reading with adequate assurance of success. The emphasis placed on the different goals in Grade I should depend largely on the individual child's preparedness for the acquisition of formal skills as he enters the grade. The best information available indicates that many first-grade children are not ready to begin reading and writing before the middle of the year. This fact brings every conscientious supervisor and first-grade teacher face to face with several serious problems. What should be the objectives for all children during the first months of Grade I? What should be the objectives for the slowest children during a large part of Grade I? Last, but very important, to what extent should emphasis on the goals of the first two levels be continued in Grade I even after children begin reading and writing?

A study of the objectives for the nursery school, the kindergarten, and Grade I shows the need for materials and situations through which children can express themselves; which throw children to-

gether in ways requiring adjustment; which encourage purposeful activity; which aid in muscular development and control; which stimulate initiative, evaluation, and perception; and which encourage a growing knowledge of the community and of community activities. In fact, the majority of objectives at all three levels call for materials and situations of this type.

HOW BLOCK PLAY AIDS IN REALIZING EDUCATIONAL OBJECTIVES

The principal opportunities for the development of most objectives in nursery school, in kindergarten, and in at least the first half of Grade I lie in trips, materials, and dramatic play. The fact that much dramatic play is an outgrowth of the presence of materials means that materials are of tremendous importance. Without the proper quantity of the proper materials, maximum progress is well-nigh impossible because there is little inducement for children to engage in activities which give rise to learning opportunities.

It is fortunate that such a wide variety of materials is available to stimulate and bring about child development because, unfortunately, most materials are limited either in their appeal or in their value. Most materials—materials for drawing and painting and for clay-working, for example—are not conducive to group play; and group play, with its possibilities for co-operation, contribution, and adjustment, constitutes one of the most fruitful sources of learning at the earliest levels.

If it were not for blocks, a desirable degree of attainment of many of the goals for the early levels would be seriously handicapped, to say the least. Blocks can do everything toward realizing many objectives which practically any other material can do, and they can do it better and over a longer period. A glance at the situation should prove this statement.

Blocks range in size from small cubes which will fit well in tiny hands to big blocks requiring effort to lift. Consider the muscular development which takes place throughout the body as the child pulls, pushes, reaches, stoops, stretches, and carries. Keep in mind that blocks require the use of the entire hand rather than the fingers alone, as do crayons and brushes and small tools like scissors. Think

of the constant and unavoidable attention which must be given to similarities and differences in weight and size. Think of the opportunity for improvement in co-ordination as day after day one block after another is put into place in the children's various and changing creations.

No other material presents the opportunities for group contacts that are offered by blocks. It seems to be natural for children, when playing with blocks, to gather in groups of from two to six. The children are soon spread out, erecting buildings, laying tracks, carrying blocks, and utilizing their creations in their dramatic play. Opportunities for friction, for lack of co-operation, for disregard of the rights of others, and for many other undesirable traits abound, and, of course, corresponding opportunities for learning and adjustment.

Blocks are unexcelled among materials for small children in their possibilities for dramatic play. To young children a number of pieces which have been put together constitute something more than a collection of blocks; the structure becomes a house, a barn, a filling station, a boat, an airport—anything within the range of a group's experiences. It becomes a thing of life. Even though such accessories as pipe-cleaner people, wooden animals, and rubber automobiles may be lacking, the children's block structures are soon populated with "live" although imaginary people and animals, the roads and tracks are filled with "real" automobiles and trains. Just play? Yes and no. To the children it is play and fun despite its purposefulness, worth-whileness, and reality to them. To the teacher this dramatic play is the vehicle of learning. To prove this statement, all one has to do is to take the list of objectives and see which are realized through this dramatic play. Consider oral expression, for example. Children who say little or nothing at any other time talk freely during dramatic play, so that freedom of expression is developed. Once a child talks freely, the teacher has opportunities to adjust tones, improve grammar, and so on. One of the finest outcomes of this purposeful play is an expanding knowledge of the community, its workers, and their activities. Properly motivated, much of the dramatic play at these early levels is an outgrowth of the observation of community

life. Play becomes an enactment of that which has been seen, and it provides opportunities for the fixing of some points of information and the acquisition of others.

Where is there a material that can develop within children the ability to express themselves, to imagine, and to initiate, as can blocks? Some activities, such as wood-working, present discouragement in the use of tools. Painting, coloring with crayons, and drawing are two-dimensional activities which, in comparison, lack variety of opportunity. Paper construction soon palls. The use of furniture, etc., for house play is limited in scope.

Why continue? A person's attitude toward block play is dependent on his philosophy of education. Those of us who believe that the objectives listed in Table 1 are desirable goals for the nursery-school level through Grade I will certainly favor the use of blocks. On the other hand, no amount of argument in favor of block play will persuade persons who are strongly convinced of the wisdom of a different set of objectives.

KINDS AND COST OF BLOCKS

It is possible, of course, that some teachers may not be using blocks because they cannot see much value in the types with which they are acquainted. It is true that there are many kinds of blocks on the market, some of which are practically valueless if not, in some ways, actually harmful. It is also true that certain types of blocks are better suited to certain age levels than to others. Unfortunately, impartial information is woefully lacking concerning types of blocks and the uses to be made of them.

It is possible, too, that some schools do not emphasize block play because it is believed that blocks are prohibitively expensive. Actually, however, such is not the case. Certain types of blocks may be included among a school's cheapest materials. Estimate the amount spent in ten years, say, on any one of such items as paints, paper, crayons, and clay, and see how that amount compares with the cost of a set of blocks. If the blocks are of the fairly small type suitable for individual children, consider the use that they receive as numbers of children resort to them day after day, for year after year. No

other medium can be combined in so many different ways with so little loss of original shape and value as can solid blocks, particularly if they are made of hard wood.

There are other factors which reduce the costliness of blocks. For example, mistakes in the use of blocks result in no waste, as is the case with a wrong cut of paper or wood. Again, the use of blocks reduces the amount of such costly or less adaptable equipment as chinning poles, slides, and swings. Physical activity is so much a part of block play that larger play apparatus is less needed in the classroom.

Moreover, it is not necessary to purchase a whole set of blocks at one time. A half-set or a quarter-set may be obtained for a slight increase in rate over the cost of a complete set. Even a quarter-set, while far from ideal for a whole grade, is inestimably better than no blocks at all.

EFFECT ON SILENT READING OF ATTEMPTING TO FOLLOW ORAL READING

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PROBLEM AND PROCEDURE

REGULAR classroom procedure in beginning reading combines, properly, appropriate preparatory exercises and oral reading of the material. After the preliminary explanations and instructions, most of the pupils try to follow the printed words visually while the teacher or a pupil reads aloud. Somewhat later in the instructional program pupils may be grouped according to ability, and in each small group one pupil at a time reads orally while the others follow silently. Long after the emphasis has shifted from oral to silent reading, it is customary to find one member of the class reading aloud while the others endeavor to keep the visual pace on the printed page.

To what extent is this practice justifiable? No doubt oral reading serves as a check on the progress of the oral reader himself and helps to improve his own oral performance. But what of the silent readers who are required to follow? Is listening to oral reading while attempting to follow the material silently advantageous or detrimental for the formation of fundamental reading habits?

This article reports an exploratory investigation of the question. The eye-movements of silent readers were photographed while they read at their own paces and also while they tried to keep pace with oral readers. The findings are presented in terms of fixation frequency, regression frequency, and pause duration.

Readers were selected from Grades II–VI, inclusive, of the University Elementary School in Berkeley, California. Scores from the Durrell-Sullivan Reading Achievement Test, Intermediate Form A, and teachers' judgments made it possible to sample the various reading-ability levels and to study the effect of trying to follow the

oral reading of relatively poorer and better readers. The Durrell-Sullivan tests measure silent rather than oral reading; they were selected for use in this investigation because silent-reading tests are more generally used by classroom teachers for reading classification. Two variations in technical approach were used: (1) Some comparisons are based on two silent readings of the same card, one at the reader's own pace and one immediately afterward while listening to an oral reader. (2) Other comparisons are based on the silent reading of two different cards, one during the oral reading of a poorer reader and the other during the oral reading of a better reader.

The photography was effected by means of a specially constructed eye-movement camera. The pupils in the University Elementary School are trained to take part in educational experiments, and the selected subjects had participated in other eye-movement investigations and were familiar both with the photographic apparatus and the experimenters. The co-operation was excellent; many pupils not selected voiced their disappointment.

The reading cards presented material new to the pupils on such topics as a mother hen and her chicks, a puppy and his bath, a toy shop, two boys earning money by gardening, a boy and a girl with a dog and a goat. Cards A, B, C, D, and E included 88, 62, 78, 78, and 77 words, respectively. Cards A, B, and C were used where the pupils read the same card twice in immediate succession, first alone and then following an oral reader. Cards D and E were used in chance order when the silent readers read one card during the oral reading of a poorer reader and the other during the oral reading of a better reader.

FINDINGS

Table 1 presents data to show the effect on the silent reader's fixation frequency when he attempted to follow the oral reading of a poorer reader. Since he read the same card twice in immediate succession, a certain improvement in fixation frequency might have been expected as a result of practice. The table shows, however, that, when silent readers attempted to keep pace with the oral reading of readers poorer than themselves, they almost invariably increased the number of fixations. In Grade II, where the reading scores of the silent readers were twice as good as those of the oral readers, the

number of fixations increased 46 per cent. In Grade III, where the scores of the silent readers were only slightly better than those of the oral readers, the fixations increased 63 per cent. In Grade IV, where the silent readers were about two and one-half times as good as the oral readers, the fixations increased 94 per cent. In Grades V and VI, where the silent readers' scores were about one and one-half and one and one-third times as good as the oral readers' scores, fixations increased 51 and 49 per cent, respectively.

Table 1 also presents data which show that the regressive movements likewise increased when the silent reader endeavored to follow the oral reading of a poorer reader. In Grade II the increase amounted to 83 per cent, in Grade III to 120 per cent, in Grade IV to 160 per cent, in Grade V to 77 per cent, and in Grade VI to 85 per cent.

Further data indicate that, when the silent readers tried to keep pace with the oral reading of poorer readers, they prolonged the visual pause. For the second-grade group the increase amounted to 28 per cent; for the third-grade group, 41 per cent; for the fourth-grade group, 35 per cent; for the fifth-grade group, 19 per cent; and for the sixth-grade pupils, 14 per cent.

Table 2 shows that, when silent readers tried to keep pace with the oral reading of better readers than themselves, eleven records showed a fixation decrease and eight, an increase. For the second-grade group as a whole, where the reading scores of the silent readers were about two-thirds as good as those of the oral readers, the change amounted to a decrease of 17 per cent. For the third-grade group, where the scores of the silent readers were about three-fourths as good as those of the oral readers, the change amounted to an increase of 30 per cent. In Grade IV and VI, where the scores were nearly nine-tenths as good, there were a decrease of 2 per cent and an increase of 2 per cent, respectively.

According also to Table 2, ten records showed an increase in the number of regressions when silent readers tried to follow the oral reading of better readers, eight records showed a decrease in the number of regressions, and one showed no change. For the second-grade group as a whole there was a decrease of less than 1 per cent; for the third-grade group, an increase of 39 per cent; for the fourth-

TABLE 1

NUMBER OF FIXATIONS AND REGRESSIONS AND AVERAGE DURATION OF PAUSES OF PUPILS WHEN READING SILENTLY AT OWN PACE AND WHEN FOLLOWING THE ORAL READING OF THE SAME MATERIAL BY A POORER READER

SILENT READER	TEST CARD READ	READING SCORE		NUMBER OF FIXATIONS		NUMBER OF REGRESSIONS		AVERAGE DURATION OF PAUSES (IN THIRTIETHS OF A SECOND)	
		Silent Reader	Oral Reader	First Silent Reading (with No Oral Reading)	Second Silent Reading (Following Oral Reading)	First Silent Reading (with No Oral Reading)	Second Silent Reading (Following Oral Reading)	First Silent Reading (with No Oral Reading)	Second Silent Reading (Following Oral Reading)
Grade II:									
1.....	A	34	20	103	139	30	43	9.22	11.01
1.....	C	34	2	107	207	31	77	9.34	11.85
2.....	A	19	9	136	204	40	80	10.79	13.00
3.....	C	27	21	92	190	18	64	9.44	14.88
4.....	A	24	15	120	118	36	30	11.14	14.50
5.....	A	31	9	103	130	22	38	10.67	9.74
5.....	C	31	24	68	78	15	19	8.73	13.88
Grade III:									
6.....	A	33	20	112	202	26	67	11.94	16.37
7.....	C	66	61	69	104	18	34	8.57	12.56
8.....	A	70	61	93	176	27	70	8.69	13.04
8.....	C	70	55	72	82	19	27	8.00	10.40
Grade IV:									
9.....	C	61	23	87	130	17	38	8.80	11.51
10.....	A	98	20	82	175	20	51	10.19	15.48
11.....	C	47	16	133	225	43	84	8.19	9.08
12.....	A	104	16	89	205	24	61	7.99	11.25
12.....	C	104	56	64	116	9	27	8.78	9.99
13.....	A	111	104	68	114	9	27	7.16	8.91
13.....	C	111	16	53	153	7	48	6.49	11.27
Grade V:									
14.....	C	91	89	71	93	14	20	7.25	7.46
15.....	C	107	78	63	86	14	23	7.19	11.40
16.....	C	54	41	95	113	20	25	8.28	8.76
17.....	C	107	86	44	94	2	26	6.89	9.28
18.....	C	116	34	67	127	24	37	9.18	9.20
Grade VI:									
19.....	A	111	71	69	126	18	38	8.35	10.35
19.....	C	111	74	56	94	13	29	8.18	8.62
20.....	C	98	76	63	86	13	26	9.16	10.45
21.....	C	97	76	76	95	13	24	8.68	9.47
22.....	C	115	71	59	96	15	34	7.83	8.84
22.....	A	115	111	71	90	25	28	7.18	8.59

grade group, a decrease of 6 per cent; and for the sixth-grade group, an increase of 8 per cent.

TABLE 2

NUMBER OF FIXATIONS AND REGRESSIONS AND AVERAGE DURATION OF PAUSES OF PUPILS WHEN READING SILENTLY AT OWN PACE AND WHEN FOLLOWING THE ORAL READING OF THE SAME MATERIAL BY A BETTER READER

SILENT READER	TEST CARD READ	READING SCORE		NUMBER OF FIXATIONS		NUMBER OF REGRESSIONS		AVERAGE DURATION OF PAUSES (IN THIRTIETHS OF A SECOND)	
		Silent Reader	Oral Reader	First Silent Reading (with No Oral Reading)	Second Silent Reading (Following Oral Reading)	First Silent Reading (with No Oral Reading)	Second Silent Reading (Following Oral Reading)	First Silent Reading (with No Oral Reading)	Second Silent Reading (Following Oral Reading)
Grade II:									
2.....	C	19	24	125	90	40	26	10.50	10.01
23.....	B	9	13	113	90	46	57	9.86	15.99
24.....	B	15	24	96	80	24	16	9.75	8.95
25.....	B	11	15	170	157	49	59	13.65	11.41
Grade III:									
6.....	A	33	36	112	202	26	67	11.94	16.37
7.....	A	66	69	77	103	25	23	8.70	10.99
26.....	A	43	49	129	117	33	28	13.60	13.14
26.....	C	43	58	111	166	25	55	10.35	9.65
27.....	C	6	36	160	179	56	56	8.61	11.05
Grade IV:									
9.....	A	61	81	100	86	21	12	9.00	10.69
11.....	B	47	56	92	89	25	27	7.79	7.45
28.....	A	82	85	132	148	42	48	8.30	10.28
28.....	C	82	92	101	95	32	26	7.22	7.67
Grade VI:									
20.....	A	98	113	78	100	20	27	8.09	9.24
21.....	A	97	98	96	90	18	17	8.43	9.11
29.....	C	71	97	103	81	23	31	9.54	10.03
29.....	A	71	74	117	113	27	17	8.76	9.05
30.....	C	107	113	64	69	14	16	8.80	9.80
31.....	A	82	97	77	90	29	34	7.66	11.01

Table 2 shows decreases in average pause time for six records and increases for thirteen records where the silent reader altered his gait to keep up with the oral reading of a better reader. Second-grade records as a group showed an average duration increase of 6 per cent; third-grade records, an increase of 15 per cent; fourth-grade

records, an increase of 12 per cent; and sixth-grade records, an increase of 14 per cent.

The foregoing tables have compared fixation frequency, regression frequency, and pause duration during two silent readings of the same card: one at the reader's own pace and one while attempting to follow the oral reading of a poorer or a better reader. Table 3 presents data from the silent reading of two different cards. While reading one card, the pupil listened to a poorer reader; while reading the other card, he listened to a better reader. Sometimes the poorer reader read one card, sometimes the other, in order that such difficulty difference as might obtain for the two cards might be offset.

When difficulty was computed on the basis of the fixation frequencies of ten pupils who read silently Cards D and E, Card E was 9 per cent harder than Card D. Nevertheless, Table 3 shows that, no matter which card was used, more fixations were required when the silent reader kept pace with the oral reading of a poorer reader than when he kept pace with a better reader.

In Grade II the reading scores of the better readers were, on the whole, three times as good as those of the poorer readers. Following the better readers required only 60 per cent as many fixations as following the poorer readers. In Grade III, where the reading scores of the better readers were about one and two-thirds times as good as those of the poorer readers, following the better readers required only 59 per cent as many fixations. The better oral readers in Grade IV scored about two and one-half times as well on the tests as the poorer readers, and keeping pace with the better readers required only 63 per cent as many pauses. In Grade VI, where the better readers scored about one and one-third times as well as the poorer readers, only 87 per cent as many pauses were made.

Table 3 shows that, of twenty-one records, only one indicated more regressions when the reader was following a better reader than when following a poorer one. In Grade II keeping pace with better readers necessitated only 53 per cent as many regressive moves as keeping pace with poorer readers; in Grade III, 57 per cent as many; in Grade IV, 48 per cent as many; and in Grade VI, 79 per cent as many.

With respect to duration of fixations Table 3 shows but three

TABLE 3

NUMBER OF FIXATIONS AND REGRESSIONS AND AVERAGE DURATION OF PAUSES OF PUPILS READING SILENTLY WHILE FOLLOWING ORAL READING OF A POORER READER AND WHILE FOLLOWING ORAL READING OF A DIFFERENT CARD BY A BETTER READER

SILENT READER	READING SCORE		TEST CARD READ		NUMBER OF FIXATIONS		NUMBER OF REGRESSIONS		AVERAGE DURATION OF PAUSES (IN THIRTIETHS OF A SECOND)	
	Poorer Reader	Better Reader	With Poorer Reader	With Better Reader	Silent Reading Following Poorer Reader	Silent Reading Following Better Reader	Silent Reading Following Poorer Reader	Silent Reading Following Better Reader	Silent Reading Following Poorer Reader	Silent Reading Following Better Reader
Grade II:										
1	2	20	E	D	161	131	58	46	11.71	9.06
2	9	24	D	E	269	110	116	39	9.42	10.25
3	9	24	D	E	169	106	52	28	12.14	10.87
4	15	41	E	D	111	67	36	14	12.60	10.70
25	15	41	D	E	168	75	51	18	12.52	9.81
32	9	13	E	D	365	242	119	83	11.49	10.07
33	2	20	E	D	165	108	56	33	12.15	10.58
Grade III:										
7	58	69	D	E	159	94	59	29	10.64	9.33
34	16	56	D	E	164	97	63	40	11.79	9.75
Grade IV:										
9	23	81	D	E	102	79	26	16	10.64	8.60
12	16	56	E	D	163	110	46	33	10.83	9.96
13	16	104	D	E	157	92	46	16	9.68	7.85
28	85	92	E	D	156	77	61	21	8.29	8.88
28	16	56	D	E	198	112	80	37	9.75	9.05
35	15	41	D	E	111	75	29	13	10.36	9.22
36	15	41	D	E	123	96	50	27	9.70	9.04
Grade VI:										
19	71	74	D	E	96	92	34	26	10.06	8.55
20	76	113	E	D	91	76	24	22	10.52	9.13
22	71	111	E	D	107	84	44	28	8.44	8.17
29	74	97	D	E	82	80	16	21	8.80	8.88
30	76	113	D	E	99	81	27	17	11.94	9.47

exceptions in twenty-one records to the general tendency to pause more briefly when following better oral readers than when following poorer ones. In Grade II the average pause time while listening to better readers was only 87 per cent as great as when listening to poorer readers; in Grade III, 85 per cent as great; in Grade IV, 90 per cent as great; and in Grade VI, 89 per cent as great.

CONCLUSIONS

Certain related questions arising from these findings will be studied subsequently. While this study was exploratory in nature, conclusions from the data are clearly pointed.

When silent readers from the elementary-school levels try to keep pace with the oral reading of less able readers than themselves, they tend to employ more fixations, more regressions, and longer pauses than when they proceed at their own rates. Similarly they tend to pause longer and more often and to regress more frequently when they follow poorer readers than when they follow better readers. Third, listening to better readers may or may not decrease the number of fixations and regressions and length of pauses. Where improvement is effected, it appears probable that the superiority of the oral reader is marked.

Under ordinary classroom conditions oral reading is prerequisite to beginning silent reading. After the early adaptations have been made, listening to oral reading may still possess certain values in developing fundamental silent-reading habits provided the oral reading is of sufficiently good quality.

The undiscriminating practice of calling on all pupils in turn to read aloud while the rest of the group follows silently is without justification. It is not uncommon to penalize a child who "loses his place" and is unable to take up the reading where the preceding reader stopped. Such penalties obviously fall to many pupils whose reading habits are more mature than those of the oral readers; they place a premium on conformity rather than efficiency. Incidentally, they cool the reading interest. Such social values and oral-reading improvement as may accrue can be gained through other techniques. The data are unmistakable in condemning the routine practice of requiring silent readers to follow the oral reading of poor and mediocre readers.

SELECTED REFERENCES ON KINDERGARTEN-PRIMARY EDUCATION

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THE following references on kindergarten-primary education were selected from among publications of the interval January 1, 1939, to January 1, 1940. The basis of selection and the basis for grouping items remain the same as those of the seven preceding annual lists. While there appear an increased interest in child-adjustment problems and a marked tendency to give more study to social and cultural aspects of the curriculum, the topic scoring highest in frequency is that of reading readiness.

General Educational Aspects[1]

171. ANDERSON, JOHN E. "Changing Emphases in Early Childhood Education," *School and Society*, XLIX (January 7, 1939), 1–9.

Discusses seven trends: (1) participation in group activities, (2) recognition of learning that goes on outside classrooms, (3) guidance in sensitizing children to stimulation and activities, (4) importance of appropriate experience as motivation to learning, (5) increase in effectiveness of education as emphasis is placed on indirect rather than direct methods, (6) use of integrated activities that move toward definite goals, (7) training in personal and social relations. The relation of these trends to teacher training is pointed out.

172. BARUCH, DOROTHY WALTER. *Parents and Children Go to School.* Chicago: Scott, Foresman & Co., 1939. Pp. xiv+504.

Describes day-by-day experiences of children in a nursery school and kindergarten under the supervision of the author. Stresses parent education.

173. BEUST, NORA E. "Books around the World," *School Life*, XXV (November, 1939), 40–41, 63.

Gives origin and development of Book Week. The theme for this year, "Books around the World," and book lists published by the American Library Association, National Congress of Parents and Teachers, and National Council of Teachers of English are cited as evidence of interest in internationalism.

[1] See also Items 378 (Hume) and 379 (Kaye) in the list of selected references appearing in the June, 1939, number, and Items 688 (Bigelow) and 701 (Greene and Staton) in the December, 1939, number of the *Elementary School Journal*.

174. BROWN, FRANCIS J. *The Sociology of Childhood.* New York: Prentice-Hall, Inc., 1939. Pp. xxii+498.

Presents a textbook in educational sociology in terms of social processes of normal childhood.

175. BUSWELL, G. T. "How Much Freedom Should Be Granted to Pupils to Choose Their Experiences in Learning?" *Elementary School Journal,* XL (December, 1939), 256–68.

Develops the thesis that complete freedom for pupils to choose their learning experiences is utterly indefensible. Shows that the solution lies in a better understanding, on the part of the teacher, of child psychology and present social conditions.

176. CASEY, E. T., and KONOLD, A. E. "The Problem of Stabilizing Kindergarten Attendance," *Journal of Educational Research,* XXXIII (October, 1939), 110–13.

Presents an analysis of factors influencing kindergarten attendance in Alhambra, California, and offers suggestions for stabilizing attendance.

177. DAVIS, MARY DABNEY. "The Primary Unit—An Aid to Children's Progress," *School Life,* XXIV (July, 1939), 297–98, 318–19.

Discusses subsequent advantages of reorganization of primary grades on the basis of social maturity of pupils with due consideration to physical, emotional, and intellectual maturation.

178. "Experiments in Reorganizing the Primary School—A Symposium," *Childhood Education,* XV (February, 1939), 262–71.

Presents data from questionnaires sent to superintendents, supervisors, and others to determine what modifications are being made in kindergarten-primary grades. The contributions are summarized by Robert Hill Lane.

179. FERRIS, HELEN. "On a Certain Consideration in Writing for Boys and Girls," *Elementary English Review,* XVI (October, 1939), 213–15, 220.

Discusses two essentials—the understanding of children and the purpose of the writer—as interpreted in nontechnical analysis by the editor-in-chief of the Junior Literary Guild.

180. GÁG, WANDA. "I Like Fairy Tales," *Horn Book,* XV (March, 1939), 74–80.

Discusses a current controversial issue and contends that fairy tales convey an understanding of such concepts as "resourcefulness of poor people, frequent fall of vanity, importance of kindliness to wayfarers, value of sense of humor, and respect for elders."

181. HOLLINGSHEAD, BILLIE. "An Evaluation of Half-Day and Full-Day Sessions in the First Two Grades," *Elementary School Journal,* XXXIX (January, 1939), 363–70.

Presents an investigation of six major problems arising out of the policy of half-day sessions in Utah.

182. MILTON, JENNIE. "Children and the Comics," *Childhood Education*, XVI (October, 1939), 60–64.

Reports that more than 99 per cent of 271 pupils in Grades I–VII read "funnies" frequently and that more than 95 per cent liked them because they are funny, interesting, and exciting. Suggests six ways for parents, teachers, and librarians to guide children's tastes to more wholesome literature.

183. NOLEN, ELEANOR. "The Nineteenth Century Children's Magazines," *Horn Book*, XV (January, 1939), 54–60.

Gives historical survey of children's magazines published during the past century.

184. REECE, ELLEN STEELE. "An Interesting Age To Teach," *Progressive Education*, XVI (April, 1939), 234–39.

Analyzes growth and development of eight- and nine-year-old children in the Rosemary Junior School in Greenwich, Connecticut, as interpreted from such data as pediatricians' health records, intelligence and achievement tests, interviews with parents, recordings of behavior of children in groups, detailed reports on each individual, and notes on individual and group activities.

185. REYNOLDS, MARTHA MAY. *Children from Seed to Saplings*. New York: McGraw-Hill Book Co., Inc., 1939. Pp. x+338.

Considers successive stages of growth and development from before birth through adolescence.

186. TABA, HILDA. "The Functions of Evaluation," *Childhood Education*, XV (February, 1939), 245–51.

Characterizes four functions of evaluation and describes in detail ways of developing a program for achieving these values.

187. WRIGHTSTONE, J. WAYNE. "Appraisal of Tests and Measures for Young Children," *Childhood Education*, XV (February, 1939), 252–57.

Presents eight trends in tests and measures for young children as those "likely to contribute to the knowledge and understanding of the growth and progress of children."

CURRICULUM, TEACHING PROCEDURES, AND MATERIALS[1]

188. BERRY, FRANCES M. (chairman). *Equipment and Supplies: Lists of Suggested Equipment for Nursery School, Kindergarten, and Primary Grades*. Bulletin of the Association for Childhood Education, Committee on Equipment and Supplies. Washington: Association for Childhood Education, 1939 (revised). Pp. 48.

[1] See also Items 420 (*Child Development and the Curriculum*), 436 (Bowes), 442 (Gates), 444 (Gates and Russell), 448 (*The Implications of Research for the Classroom Teacher*), and 458 (Stretch) in the list of selected references appearing in the September, 1939, number, and Items 498 (Lewerenz), 502 (Oak), 508 (Seegers), 514 (Anderson), 522 (Heffernan), 537 (Garver), and 569 in the October, 1939, number of the *Elementary School Journal*.

Contains lists of selected equipment and supplies for pre-primary and primary schools and gives sources from which these may be obtained.

189. BERRY, FRANCES M. (chairman). *Uses for Waste Materials.* Bulletin of the Association for Childhood Education, Committee on Equipment and Supplies. Washington: Association for Childhood Education, 1939. Pp. 12.

Suggests variety of ways in which waste materials may be used to stimulate initiative and constructive imagination.

190. BETZNER, JEAN (chairman). *A Study of Reading Workbooks.* Bulletin of the Association for Childhood Education, Primary Committee. Washington: Association for Childhood Education, 1939. Pp. 40.

Considers function of reading workbooks in terms of current knowledge of child development and learning processes.

191. BETZNER, JEAN (compiler), with evaluations by N. L. ENGELHARDT, JR., ELIZABETH NETERER, and R. LEE THOMAS. *School Housing Needs of Young Children.* Washington: Association for Childhood Education, 1939. Pp. 40.

Describes school housing that meets children's needs in relation to health, safety, economy, and modern curriculums.

192. DAVIS, MARY DABNEY. "Teaching Aids for Teachers," *School Life,* XXIV (February, 1939), 144–47.

Lists nine government agencies, with their particular bureaus and departments, and fifty-two professional and noncommercial organizations from which teaching aids may be obtained. Reprints are available through the United States Office of Education.

193. GUNDERSON, AGNES G. "Simplified Phonics," *Elementary School Journal,* XXXIX (April, 1939), 593–603.

Discusses simplified phonics under four topics: (1) "When should phonics be taught?" (2) "How should phonics be taught?" (3) "What phonics should be taught?" (4) "Phonics in intermediate grades." A bibliography of thirty titles is included.

194. HARRISON, M. LUCILE. *Reading Readiness.* Boston: Houghton Mifflin Co., 1939 (revised). Pp. viii+256.

Adds sixty pages which extend the limited view of readiness for beginning reading to a program of readiness applicable to all subsequent educational levels. Emphasizes readiness for the thinking side of reading.

195. JOHNSON, WILLIAM H. "The Pre-reading Program of the Chicago Public Schools," *Elementary School Journal,* XL (September, 1939), 37–44.

Describes an extensive developmental program in pre-reading activities based on recommendations of a committee of supervisors and principals.

196. KVARACEUS, W. C. "The Primary Report Card," *Elementary School Journal,* XXXIX (June, 1939), 747–50.

Discusses newer practices in reports of pupils' progress and points out values and certain weaknesses.

197. MATHIAS, MARGARET E. "Encouraging the Art Expression of Young Children," *Childhood Education*, XV (March, 1939), 293–98.

Believes that providing recurring as well as novel experiences, allowing free choice in selecting art materials for expressing ideas, and discussing the art products aid in developing art expression among young children.

198. PISTOR, FREDERICK. "Spotlighting Activity Programs," *Childhood Education*, XV (February, 1939), 272–78.

Discusses strengths and common weaknesses in three types of classroom activities: construction and creative work, problem-solving, and drill activities.

199. RAMSEY, ELOISE. "Seeing the Calendar in Perspective," *Childhood Education*, XVI (September, 1939), 5–13.

Presents, in the first article of a symposium of five articles, general principles governing the celebration of festivals.

200. SPACHE, GEORGE. "A Phonics Manual for Primary and Remedial Teachers," *Elementary English Review*, XVI (April and May, 1939), 147–50, 156; 191–98.

Discusses arguments for and against teaching phonics, develops a syllabus of phonograms and initial consonants using six criteria of selection, and describes a program of instruction.

201. STONE, CLARENCE R. "Most Important One Hundred and Fifty Words for Beginning Reading," *Educational Method*, XVIII (January, 1939), 192–95.

Formulates a graded vocabulary for primary reading allocated on eight levels.

202. SULLIVAN, MARY G. "Books on Other Lands for Second Grade Literature," *Elementary English Review*, XVI (May, 1939), 179–83.

Discusses a group of about twenty books used with second-grade pupils and includes others in an appended bibliography.

203. WASSON, ROY J. "Certain Social-Studies Content of Children's Letters and Conversations," *Elementary School Journal*, XL (November, 1939), 189–97.

Presents data relative to the social interests of primary children found in the analysis of their voluntary letters and conversations.

204. WATTERS, GARNETTE, and COURTIS, S. A. *A Picture Dictionary for Children*. New York: Grosset & Dunlap, 1939. Pp. 478.

Presents a picture dictionary for Grades I–III that contains 4,832 words and their variants. Words are printed, written, and illustrated with pictures and simple sentences.

INVESTIGATIONS AND EXPERIMENTAL STUDIES[1]

205. AGNEW, DONALD C. *The Effect of Varied Amounts of Phonetic Training on Primary Reading.* Duke University Research Studies in Education, No. 5. Durham, North Carolina: Duke University Press, 1939. Pp. viii+50.

Offers evidence to support the conclusion that "phonetic training when given consistently in large amounts [in first and second grades] (*a*) increases independence in recognizing words previously learned; (*b*) aids in 'unlocking' new words by giving the pupil a method of sound analysis; (*c*) encourages correct pronunciation; and (*d*) improves the quality of oral reading."

206. ANDERSON, JOHN E. "The Development of Social Behavior," *American Journal of Sociology*, XLIV (May, 1939), 839–57.

Summarizes research studies in social behavior under four topics: (1) social organization, (2) social attachments, (3) motivation within the group, and (4) differentiation of function within the group. Lists factors conditioning social behavior and concludes that modifiability of social behavior is supported by research findings.

207. ANDERSON, HAROLD H. "The Measurement of Domination and of Socially Integrative Behavior in Teachers' Contacts with Children," *Child Development*, X (June, 1939), 73–89.

Reports a study of techniques used in developing "measures for recording in terms of dominative and integrative behavior the contacts which teachers have with kindergarten children."

208. COURTIER, AUDREY MARCH. "Criteria for the Selection of Primers," *Elementary English Review*, XVI (November, 1939), 271–78.

Analyzes twenty recent primers the content of which was based on social study and realistic materials; offers data on overlapping vocabularies; and suggests criteria for characterizing content, vocabulary burden, sentence patterns, picture values, and general format of the printed page.

209. DEAN, CHARLES D. "Predicting First-Grade Reading Achievement," *Elementary School Journal*, XXXIX (April, 1939), 609–16.

Analyzes causes of first-grade failures in public schools of Billings, Montana, on the basis of results from tests of vision, intelligence, and reading readiness.

210. GATES, ARTHUR I. Gates Reading Readiness Tests. New York: Teachers College, Columbia University, 1939.

These tests were constructed "to measure readiness for beginning reading, to predict the rate of development of reading ability, and to diagnose the pupil's status."

[1] See also Item 482 (Wrightstone, Rechetnick, McCall, and Loftus) in the list of selected references appearing in the September, 1939, number; Items 581 (Brownell and Others), 584 (Buckingham), 589 (Smith and Eaton), 590, 595 (Blough), 608 (Russell), and 617 (Coleman) in the November, 1939, number; and Items 123 (Arrington), 138 (Johnson), 141 (McGraw), and 157 (Van Alstyne and Hattwick) in the March, 1940, number of the *Elementary School Journal*.

211. GATES, A. I., BOND, G. L., and RUSSELL, D. H., assisted by EVA BOND, ANDREW HALPIN, and KATHRYN HORAN. *Methods of Determining Reading Readiness*. New York: Teachers College, Columbia University, 1939. Pp. 56.

A statistical study of the predictive value of recently designed measures of reading readiness.

212. GOLDSMITH, SADIE. "The Fable as a Medium for Character Education," *Elementary English Review*, XVI (October, 1939), 223–25, 228.

Reports results from the author's doctoral dissertation that indicate negative value of the fable in influencing moral judgment of 402 primary-school children tested. Other values are suggested, however.

213. GOTTEMOLLER, R. "The Influence of Certain Aspects of the Home Environment on the Adjustment of Children to Kindergarten," *Smith College Studies in Social Work*, IX (June, 1939), 303–59.

A study of children's adjustment to kindergarten in relation to parents' behavior toward children.

214. KVARACEUS, W. C. "Intelligence Testing in the First Grade," *Elementary School Journal*, XXXIX (May, 1939), 690–91.

Finds wide variance in results of mental tests of first-grade children in the same city school system for two successive years and interprets results as influenced by varying length of period between entrance to grade and date of test.

215. MACLATCHY, JOSEPHINE H. "How Number Learning Develops," *Childhood Education*, XV (January, 1939), 207–12.

Traces development of number-learning through diary account of individual children and through studies involving groups between two and six years of age. Finds that in early stages skill and concept are not readily distinguished.

216. MOTT, SINA M. "The Growth of an Abstract Concept," *Child Development*, X (March, 1939), 21–25.

Summarizes "an investigation concerning the growth of concrete and abstract ideas" as revealed in the drawings of children ranging in age from four years and seven months to seven years and six months.

217. NICHOLS, MARY DELIA; WORTHINGTON, JOSEPHINE; and WITMER, HELEN. "The Influence of the Teacher on the Adjustment of Children to Kindergarten," *Smith College Studies in Social Work*, IX (June, 1939), 360–402.

Studies two groups of kindergarten children to determine differences in adjustment referable to differences in environment.

218. PECHSTEIN, L. A., and MUNN, MERTON DEMING. "The Measurement of Social Maturity in Children," *Elementary School Journal*, XL (October, 1939), 113–23.

Gives an account of the development of a rating instrument for the measurement of social maturity in Grades I, II, and III.

Educational Writings

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REVIEWS AND BOOK NOTES

A NEW TREATMENT OF OLD PROBLEMS.—Next to pupils, teachers are the chief concern of superintendents and boards of education. One needs but look at the Table of Contents of Cooke's interesting book[1] to find that it deals with problems which are eternally old and yet always new. What superintendent has not again and again struggled with the questions of employing or dismissing married women, of selecting or not selecting local residents, of when and when not to pay teachers for absence, of how to administer the substitute-teacher service, how to determine teacher merit, how to establish scientifically the teacher's load, how to introduce a new salary schedule, how to stimulate professional improvement! But, as every superintendent and every school-board member knows, the foregoing are merely the title-heads of separate but related problems.

I must admit that, on opening this volume, I was prejudiced against another book on teaching personnel, but my prejudice was soon dissipated. I found the book filled with sage advice—good common sense crystallized from the experience of hundreds of school boards and superintendents and thousands of teachers throughout the United States.

Back of this common sense is a wealth of research. In this book the author has summarized the results of two decades of research on teaching personnel, and he has so organized his material that the volume is a manual of ready reference for the busy superintendent and for school-board members.

The author's general plan of treatment is to give a chapter to each major problem. He discusses the problem briefly, divides it into its subsidiary problems, marshals the research that is available bearing on each, presents a selected bibliography, and outlines one or two topics for further study. Where the evidence warrants, he recommends a desirable procedure for boards of education to adopt. His treatment is illustrated by the subtopics under "Selecting Local Residents as Teachers." These are: "Who is a local teacher?" "Arguments favoring local teachers," "Arguments against local teachers," "Inbreeding," "Policies and practices concerning local residents as teachers," "Number of local teachers employed," "Why there are so many local teachers," "Ratings of local and nonresident teachers," "Two significant statements regarding local teachers," "Suggestions as to how to meet the problem," and "Problem for study."

[1] Dennis H. Cooke, *Administering the Teaching Personnel.* Chicago: Benj. H. Sanborn & Co., 1939. Pp. xiv+348. $2.40.

Many boards and superintendents will find useful the suggested forms and records included in this volume. Illustrative of such materials are the scales for rating teachers, the leadership check list, the scale for evaluating principals, the scale for rating school-board members, and the form for obtaining the record of teachers' living costs. There are also suggested application forms and letters for obtaining information concerning prospective candidates and other similar illustrative materials.

The character of the book is further illustrated by the use of such materials as Mary H. Strange's advice from a substitute teacher, Gates's evidence on large classes as a cause of failure in reading, the effect of combinations of subjects as related to teachers' loads, problems involved in the transition from an old to a new salary schedule, Moehlman's index for comparing teachers' salaries with other wages, and a formula for constructing a new salary schedule.

The author's common-sense approach to his subject is suggested in the following introduction to the paragraph on adjusting the teacher to the position: "The selection of a teacher is never completed until he is actually appointed, contracted with, assigned to a position, comfortably located in a suitable home, and introduced to his work and his immediate associates" (p. 60).

Administering the Teaching Personnel is a book that every superintendent will want on his shelf for immediate reference. It makes readily available to him all the research and the essence of the experience of boards of education and superintendents throughout the United States in dealing with any of the varied issues involved in administering wisely a teaching personnel.

J. CAYCE MORRISON

New York State Education Department

MEASUREMENT IN THE FIELD OF ELEMENTARY EDUCATION.—In the volume under review[1] the author "attempts to give the historical facts and the philosophy necessary for an understanding of how educational measurements have developed, as well as to present information dealing with the construction and uses of achievement and mental tests" (p. v). The book is intended as a guide both for classroom teachers and for students in teacher-training institutions.

Following a thirteen-page introduction, consideration is given to "The Terminology of Educational Measurement." "The Treatment of Statistical Data" and "The Use and Interpretation of Statistical Measures" together constitute over one-sixth of the book. Numerous references for further study are presented, while the content extends through standard deviation and quartile deviation to the Pearson product-moment formula for computing the coefficient of correlation. Four forms of graphs, the experimental coefficient, the percentile scale, and the error-analysis chart are also included.

"Standardized versus Teacher-made Objective Examinations" and "The

[1] M. E. Broom, *Educational Measurements in the Elementary School.* New York: McGraw-Hill Book Co., Inc., 1939. Pp. x+346. $3.00.

Construction and Use of Teacher-made Objective Tests" are considered in the next fifty-nine pages. Some readers may question the wisdom of devoting over two pages to a description of the rearrangement type of test since the author reports that "obviously, the determination of a scoring formula is necessary" and that "it is difficult to defend any formula used for this purpose" (p. 131).

Four chapters, whose pages total approximately a third of the entire volume, are devoted to a discussion of standardized tests in the language arts, in arithmetic, in the social studies, and in other elementary-school subjects, the consideration of language-arts tests utilizing more than half the space in this section of the book. For each of the school subjects considered, sample exercises from standardized tests are presented, the content of different tests is described, and suggestions are given concerning the grade range within which the tests should be utilized, together with publishers' addresses, and suggested readings for further study.

The nature of intelligence and its measurement is the subject of the next fifty-five pages. The history of the measurement of intelligence, the definition of intelligence, physiological theories of intelligence, characteristics of intelligence, kinds of intelligence, a philosophy of mental measurement, the constancy of the intelligence quotient, and the uses of mental tests are among the topics treated in these two chapters. Eight types of mental-test content are presented, and seven group tests of mental ability are described. In viewing the publication as a textbook for teacher-training groups, some readers might wish that more consideration had been given to the interpretation and the utilization of mental-test findings, such as the interpretation of a pupil's intelligence quotient, the best school adjustments to be made for different levels of student brightness, or even the prediction of secondary-school achievement by means of elementary-school test findings.

The final chapter deals with the "Uses of Educational Measurements," including administrative uses, supervisory uses, and uses in classroom teaching. The appendixes include a list of publishers of standardized tests with their addresses, forms for the computation of standard deviation and of the Pearson product-moment coefficient of correlation, as well as a table of the squares and square roots of numbers from 1 to 1,000.

From the standpoint of the volume as a textbook, it includes many teacher helps, a great number of footnote references, short bibliographies at the ends of the chapter sections as well as at the close of the chapters themselves, and approximately forty pages of discussion topics and exercises. It is of interest to note that about two-fifths of the space devoted to these questions and exercises utilizes objective forms of test material, such as matching and completion exercises and true-false statements.

While mental tests are considered in this book on educational measurements in the elementary school, one finds no mention of attempts to measure character and personality development, attitudes, or study habits. Rating scales

are not discussed, interest inventories are not considered, and the discussion of the measurement of achievement in health and physical education is limited to less than a page. Only one test is described in the field of elementary science, as the author states that "science has had only a small place in the instruction program in elementary schools . . . ." and that "in all instances, it is a non-laboratory course" (p. 244). The pupil-testing and evaluation procedures being developed by the progressive education movement fail to receive mention. In fact, since the median publication date for the writings of other authors mentioned in the footnote and bibliography citations is 1928, the reader may be encouraged to assume that little real advancement has been made in the elementary-school testing field during recent years.

F. J. ADAMS

University of Texas

THE SOCIAL DIMENSION OF EDUCATION.—There is nothing startlingly new in a book's insisting on a social emphasis in education. From Plato's *Republic* to Dewey's *Democracy and Education* and beyond, there have been frequent summonses to clothe the school in a social context. The novel quality, however, in this succession of books is the redirection which is constantly necessary so that education at a given time and place will reflect the quality of social living for a given country in a given epoch. What distinguishes the book under review[1] is its description of the social dimension to which it boldly seeks to orient the schools of America.

After two introductory chapters that give education a general setting in social culture, the waist of the book, chapters iii–ix, is given over to a portrayal of American culture. Chapter iii deals with the democratic character of our culture. Then follows a chapter which ascribes the dynamic character of our culture to the unending stream of invention and suggests both negative and positive methods for controlling this stream. The mention of invention paves the way in the next chapter for a discussion of the influence of science—techniques—on our modes of associated living. Since civilizations are predicated to a large degree on natural resources, it is these factors in culture which next receive attention. The succeeding chapter naturally deals with economic man and makes standards of living and social welfare the paramount issue. Another chapter treats of art—whether in architecture, painting, drama, or literature—in its social genesis and social bearings. For the most part one must really read these chapters to grasp the novelty of their outlook on the contemporary social scene. The implied deficiencies in the composition of the conventional curriculum, even many reconstructed curriculums, are undoubtedly worthy of notice. Because any effort to capitalize on the orientation of these chapters would require the modern teacher or superintendent to take an advanced and necessarily

[1] *Social Education*. Stanford Education Conference. New York: Macmillan Co., 1939. Pp. viii+312. $1.75.

exposed position, one whole chapter is devoted to a criticism of the theory that the school should be neutral on controversial social issues and to a support of the thesis that the school should be unabashed in being partial to a frame of reference—here the democratic one.

The third and final section of the book is devoted to the more technical phases of incorporating the social dimension into the educational process. Here appear chapters dealing with personality socially conceived, the educational philosophy basic to social education, the socialization of curriculum and method, and finally new steps which the social emphasis will require in evaluation. This last division of the book is obviously intended to implement the middle section.

For a book in which each chapter is contributed by a different author, this publication possesses a surprising degree of continuity and unity. It is in the waist of the book, with contributors like William Fielding Ogburn and Lewis Mumford, that the greatest appeal lies. It is the twist given there to the understanding of the contemporary pattern of social culture that lends significance to the rest of the book. As was said at the outset, no contribution lies in recalling the importance of the social dimension in education. It is of the utmost importance, however, to point out when the time comes for making a change or departure in the conventional stereotype of the school's social pattern, with all its attendant consequences for pedagogy. This the book does in a sound and challenging way.

JOHN S. BRUBACHER

Yale University

DEVELOPING NUMBER CONCEPTS IN THE PRIMARY GRADES.—An increasing number of schools have postponed the teaching of number to the second or the third grade, and the meaning of number has been suggested as the preferred first step in arithmetic. This arithmetical change has caused a great deal of worry on the part of teachers and supervisors. Many teachers who are efficient in conducting drills are at a loss in developing meanings. Those teachers and their supervisors will welcome Clark, Otis, and Hatton's new book.[1]

The small volume is divided into two parts: one for the first grade, the other for the second grade. The topics allotted to each grade seem reasonable. For both parts the authors' guiding thought in selecting curriculum materials was to choose "those that will be of lasting value as the basis for acquiring further knowledge" (p. vi). The book lives up to its title by including a wealth of material which shows in detail how children's experiences may be chosen and utilized in developing number concepts. Every meaning is developed in a concrete and detailed manner that should prove helpful. Only enough theory is included to make sure that the teacher will understand why the meanings have

[1] John R. Clark, Arthur S. Otis, and Caroline Hatton, *Primary Arithmetic through Experience*. Yonkers-on-Hudson, New York: World Book Co., 1939. Pp. xiv+218. $1.40.

been developed as they are. The authors state that they are attempting to occupy "a middle ground between the two extremes of the now outmoded formalism of an overburdened curriculum and the unestablished freedom of wholly incidental learning" (pp. v–vi), and they appear to have accomplished that purpose. They seem to realize that experience alone is not enough; experience must be thought over if it is to be of educational value. Concrete demonstrations of how to get children to think about their experiences have been included.

Teachers who are doing informal work in numbers have been troubled by the fact that children are frequently confronted with problems requiring answers to fundamental facts which have not been learned. To meet this situation, the authors propose the use of the "hundred chart" and a "slide rule," two devices which appear likely to meet this pressing need.

The book is small enough to encourage busy teachers to dip into it. They will find its detailed suggestions so helpful that it is certain to be used widely as a handbook. Probably the volume will be useful as a textbook, and for this purpose it might have been better had the authors included reference to studies that have been made and had they added a bibliography. In any event, the book is a welcome contribution to the teaching of number in the primary grades.

R. V. YOUNG

University of Pittsburgh

A BEGINNING COURSE ON THE CARE OF CHILDREN IN THE HOME.—Hunt's book[1] is a popular treatise, dealing primarily with the physical care of the child, which purports to be suitable for the college student. Making no claim for the originality of her material, the author sets forth, largely in the form of specific instructions, some of the current dogma concerning the physical protection of children. About three-fourths of her pages are devoted to a consideration of questions of nutrition and diet, and these primarily in relation to the young child and to the mother while she is host to her baby. The material on nutrition is given, in large measure, in the form of comment on foodstuffs which are to be consumed by individuals of various ages, types, and body conditions. The general tone is that of menu-giving. There is little discussion of technical details. The use of dietary tables is not mentioned, for instance; nor, accordingly, is instruction given in the computation of the quantities of various food elements which specific diets contain. The procedure followed, of course, leaves the student fairly tied to the book. No substantial exposure to controversial issues is provided. That there might be room for debate on the instructions set forth is not made clear. No notion is given of the methods of research yielding the groundwork of the practices advocated.

With respect to aspects of physical care other than those dealing with nutrition, the instructions are even more general. The student is told merely that a child must have plenty of sleep, fresh air, and exercise and that he must be

[1] Leila Wall Hunt, *The Child in the Home.* New York: Prentice-Hall, Inc., 1939. Pp. xii+260. $2.50.

kept clean. There is no comment, however, on the physiology of ventilation, for example; nor are the features of common home practices which are questionable from the point of view of sanitation held up for inspection. The usual instructions on the clothing of children and the characteristics of various common diseases are omitted. Certain psychological problems of child care are discussed in two chapters. One of these, devoted to a consideration of some of the problems of heredity, contains a somewhat uncomfortable number of sweeping statements; the other, on management and discipline, is bromidic. Interestingly enough, a whole chapter is given over to setting forth the values of nursery schools. This inclusion, or at least this emphasis, seems scarcely justified in that the book professes to be concerned with the child in the *home*. On the other hand, if the aforementioned intent is ignored, we may well wonder why no other educational institution receives comment. A religious tone pervades the discussion.

The volume is not, in my opinion, one of the best available on the care of the child. While it is a fairly satisfactory survey of some information which at present we believe is likely to be helpful to young parents, this reviewer is convinced that the average American college student can tolerate, even in a first course, more real grist. He needs instruction that will provide him with more degrees of freedom, make him constantly challenge his practice, give him some conception of the fallibility of our knowledge and of the methods whereby it has been attained, make vivid the problem of individual differences, raise the curtain for him on the question of the conflict of values and forces, and develop in him a better understanding of the framework of values—the philosophy—in which our dogma is set.

HELEN L. KOCH

University of Chicago

THE WORK-PLAY READERS.—The series of textbooks under consideration[1] is an extensive and highly organized body of material for use in carrying out a reading program in the first three school grades. The materials are of three

[1] Arthur I. Gates, Miriam Blanton Huber, and Celeste Comegys Peardon, *The New Work-Play Books*. Basal Readers: *Off We Go* (Pre-primer), pp. 64, $0.20; *Jim and Judy* (Primer), pp. 154, $0.72; *Down Our Street* (First Reader), pp. 202, $0.84; *We Grow Up* (Second Reader), pp. 248, $0.88; *Wide Wings* (Third Reader), pp. 344, $0.96. Optional Readers: *Beginning Days* (a Pre-reading Book) by Arthur I. Gates and Lillian Minor, pp. 48, $0.20; *Now We Go Again* (Supplementary Pre-primer), pp. 48, $0.20; *The Surprise Box* (a Unit Reader), pp. 48, $0.16. *Preparatory Books: To Accompany "Jim and Judy,"* pp. vi+122, $0.32; *To Accompany "Down Our Street,"* pp. 136, $0.32; *To Accompany "We Grow Up,"* pp. 128, $0.32; *To Accompany "Wide Wings,"* pp. 128, $0.32. *General Manual* by Arthur I. Gates, pp. 88, $0.20. *Reader-Manuals* by Arthur I. Gates, with the assistance of Mary M. Bartlett: *For "Beginning Days," "Off We Go," and "Now We Go Again,"* pp. 98, $1.40; *For "Jim and Judy,"* pp. 172, $1.32; *For "Down Our Street,"* pp. 178, $1.48; *For "We Grow Up,"* pp. 216, $1.56; *For "Wide Wings,"* pp. 190, $1.80. New York: Macmillan Co., 1939.

types. First, there are five basic textbooks, three of which relate to the first-year reading program, the other two being for use in Grades II and III. Second, with the exception of the preprimer, each of the basic books has an accompanying preparatory book which has for its purpose the development of readiness on the part of the child for each selection or unit of reading material. Third, there is a series of manuals. These manuals are of two types, one which accompanies each of the basic books and one which gives the broader and more fundamental aspects of the entire series.

The preparatory books have, for the most part, the form of workbooks and presumably are to be placed in the hands of the pupil. Cutting and pasting exercises are provided, along with a certain amount of testing material. The main purpose of the preparatory books has to do with the preparation of the child from the standpoint of vocabulary for each unit in the basic books. Many teachers have felt the need for such material but have usually been compelled to prepare it for themselves. For the well-trained teacher these books will save much time, and the beginning teacher who is not thoroughly trained for the teaching of reading will find them very helpful. These preparatory books represent one of the contributions of the series.

The teachers' manuals, copies of which are bound with the basic books in a way which makes it possible for the teacher to refer easily from the textbook to the manual, give careful and detailed directions for the use of the preparatory material, the use of additional reading material, the use of games, and the use of enrichment activities, such as films, library books, and poems. The *General Manual* has a discussion of the underlying principles of a reading program in the first three grades. This discussion is followed by a treatment of the different skills which are involved in primary reading. Such abilities as those required in dealing with words and sentences from left to right and those involved in the recognition of new words, along with other basic activities, are given great stress. The development of the ability to phrase and to read by thought units, as well as the growth of interest in oral reading and the appreciation of poetry, is also discussed in detail. This manual contains a wealth of valuable material and is a summary of much of the experimental work which Gates has been doing for a number of years.

Two points concerning the basic textbooks are of interest. First, with the exception of the beginning book, most of the material consists of long excerpts. Examination of various prepared lists of books for children published by different organizations or by different individuals reveals that a large percentage of the books from which excerpts are taken is included in one or more of these preferred lists. No study was made of the adaptations prepared for these textbooks. Other important features concerning the passages used are that careful word counts have been made for each and that they are presented in units rather than in a series of disconnected passages. Second, the illustrations are in color, and at least one of the contributing artists is named in available

lists of contemporary illustrators for children's books. There can be no doubt about the contribution which the illustrations make to the attractiveness and the general form of the books. One objection which has been raised is that certain pages are entirely surrounded by drawings. Some teachers fear that this arrangement may be a distracting element for at least a few children.

The impression given by these readers is that a great amount of time and thought has been used in developing them. The authors have had wide experience in the field of reading, and apparently they have taken time to develop their ideas. There can be no doubt that the readers merit careful consideration on the part of persons responsible for the selection of reading textbooks.

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